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Archaic Architecture and its Symbolism at Mycenæ.

IT is satisfactory to be assured, from the announcements that have already been made, that to the zeal and accomplishments of the most sagacious of explorers and excavators, Dr. Schliemann will add the merit of promptitude in laying the results of his discoveries before the world. We learn that he has already fixed an early date for resuming the work of spade and barrow on the ancient site of Troy; and that before his departure his portfolio of photographs will be ready for publication, together with his narrative of the operations at Mycenæ, and record of the precise *provenance* of all the objects he has so wondrously brought to light. Such a thoroughly authentic record is indispensable for the development of all the value of the discovery. The superposition of excavated remains has the same significance in archæological inquiries in their bearing upon human history, as the recovery of the due sequence of strata and eruptions in the study of geology. Space, as traversed by the excavator, is a summary of time; he turns over leaf after leaf as of a buried book, of which he comes upon the latest pages first; and he is the most skilful at the work who can read off the significant contents of each layer,—can mark its limit and the transition from one anterior,—can note signs of gaps by missing leaves or layers due to previous removals, or even transpositions resulting from earlier disturbances. The notes, which must be taken as work is going on, can often be taken but hastily, and quickness of observation is required that nothing really important is overlooked. And yet the importance of a detail has often to be decided at the instant, must be recognised at first sight and at momentary sight. Much will be certainly lost by one who has no theory as to what to expect and what to look for, and much again by one who is not on his guard against only seeing what he was confident beforehand would present itself, and missing what is still more important because utterly unexpected.

But the students who are waiting for the result and report of the excavator have to be warned on their part also against the disturbing influences of prepossessions. They, too, have their theories, and are liable to be put out sorely when what is turned up will not fit into place according to an old theory, and defies manipulation as obstinately to accommodate any new one that promises moderate seaworthiness when we are all launched together upon a chartless ocean of doubt. In the various notices of Dr. Schliemann's discoveries, there have not been wanting certain signs of impatience at the proportion of the inexplicable that they seem to involve; in some cases a disposition has seemed on the point of declaring itself to denounce, or at least decry, them as of little interest, because they, as it is said, illustrate nothing, affiliate upon no previous information, supply no missing link, but are like a loose link out of a chain that we have no other trace of, and, therefore, no interest in or concern about.

But we must demur to the "therefore"; even granting, for argument, the imputed alien character which is ascribed to the art of the objects found upon the very centre of ancient Greek occupation, this very individuality would constitute a special interest. Found where they were, they are indications of a state of society that cannot be divorced from some relation to those which succeeded it, and in which all civilisation has an interest. The more novel they are, the more important is the accession to our knowledge; if it be but knowledge how ignorant we were before, that they minister. They are "very strange"; but they prove that there are more things under the heaven and the earth of Greek territory than have hitherto been dreamed of in the philosophy of the archæological; and the sooner the philosophy goes humbly to school again, renounces weak carpings and weaker reticence, and admits its own incompleteness until it can find a place for such strangers, and "give them welcome," the better will it be for all of us. How far precisely the new discoveries may ultimately be susceptible of establishing themselves as something more than incidental and heterogeneous intrusions into the great series of events which constitutes the early development of the Greeks, can only be fully discussed when the publication anticipated from Dr. Schliemann is before us; some may be inclined to conjecture that the outcome at last, after this accession of evidence, will be but to prove that nothing better is under consideration than the remains of a barbarous tribe, which has no more claim to take place among the ancestry, direct or collateral, of the Achaians or Hellenes, than the subjects of the Incas, the Red Indians, or the Negroes to figure in the pedigrees of the Quakers of Boston.

For ourselves, the presumption that recommends itself to us is very different, and it seems worth while to set forth some of the grounds of it at once; in doing this we shall have but occasion to touch upon a few of the details of Dr. Schliemann's discoveries and those which have been placed in a general and popular way before the readers of the news of the day. There is sufficient here, as it appears to us, to furnish an attachment to what was known before of the antiquities of Mycenæ and Tiryns and Argos, and therefore to invite us to elicit somewhat more carefully all that can be fairly inferred from this earlier information. Unless we are deceived, we shall find ourselves brought up to the conclusion that in a rigid scrutiny of the evidence for the derivation of Greek art and culture, the newly-discovered tombs, together with the Cyclopean walls, the Lion Gate and the treasuries, are all links and marks of stages in one continuous historical series.

It is rather sad, and not a little astonishing withal, that there should be any provocation to advert to illiberal carping at and disparagement of the importance and interest of these discoveries. Against some reflections which it would not be easy to specify respectfully, it may be enough to direct attention to one cardinal fact; the discovery of a head of a cow in silver, with horns of gold, executed upon a truly massive scale, at once attaches the occupant of the grave at Mycenæ, wherein it was found, with a time when the mythus, which is known to us as that of Io, the transformed maiden—the priestess of Heré—was no mere matter of poetry, but a subject of religious veneration. Thus we are carried back to the days when the pastoral title Eubœa of the meadowy precincts of the Temple of Heré originated, and when even the name of Mookeenæ (Μυκῆναι) was most willingly connected with the lowing of the sacred heifer. Leaving to Dr. Schliemann himself the cogent arguments for his cow-headed Heré, we may be allowed to refer in this connexion to the impress of some of the golden disks, of which photographs were laid before the Society of Antiquaries. Several of these were stamped with what looked much more like a moth than even a clumsy butterfly. We do not doubt that it represents the gadfly, the brize, by which Io in her transformed state was pursued and maddened, or at least the symbol out of which the story of that form of jealous persecution was developed. It is a somewhat more risky conjecture, but we do not withhold it, that the numberless other small gold circlets impressed with combinations of circular patterns had some relation to another element in the mythus—"the patines of bright gold," which in one form of the story are the stars amidst which the horned moon wanders on its ever devious route through the sky, became then the myriad eyes of the herdsman of Io, Argus Panoptes, and at last found their fate as transferred to the proud tail of Juno's peacock.

One consideration primarily we are warned to take to heart by the surprising character of these remains, and that is, to how remote a period beyond the first syllable of recorded time must be carried back the commencements of even highly-organised human society. They would doubtless have been recognised as witness of most remote antiquity had they been brought to light when Æschylus was introducing the horned Io of Mycenæ on the stage and Herodotus was noticing how closely she was the equivalent of the Egyptian Isis. Tradition, even when most unfettered, is marvellously given to shorten up the perspective of the ages; to how remote an age do even the most frugal of the Egyptologists carry back the building of the pyramids of

Gizeh, and then what ages of earlier development do not the vast and highly-artificial structures imply. The translation of the Babylonian and Assyrian texts is gradually revealing the geographical as well as chronological scope of the activity of the great empires in Asia Minor; Cyprus, Crete, the southern peninsulas of Greece, are so many geographical stages that are successively within sight of each other, and in ages of violence there were causes of migration, by invitation or compulsion, that ever favoured the dispersion of tribes to the very limits that were set by utterly inhospitable regions or unmanageable barbarians. It has now become impossible to look back upon the ages which are occupied so busily by mythologised tradition as absolute blanks; it is becoming more necessary every day to recognise that in these traditions there are fragments of the true history of those ages,—history jumbled, perverted, multilated, epitomised, metamorphosed, but a medley,—a muddle, if you please,—of historical materials still.

Even, then, as we recognise the certainty of a vast history of society anterior to the pyramids, we may accept the high probability that even before Mycenæ was fortified as it now remains, the plain of Argos was the seat of tribes under organised government,—under one dynasty after another,—tribes that may have been more or less cognate,—more or less susceptible of fusion even when not originally allied, more or less uncultured, and yet susceptible of advance even by original self-development to the highest culture of all.

Now, architecture gives us, we may say, one certain synchrony,—and we may safely infer that at whatever unknown date B.C., the Cyclopean walls of Tiryns, Argos, and Mycenæ were built by communities of much the same characteristics, and flourishing together within the same period, whatever its unknown,—its probably enormous,—length. These three cities lay within an area locked by mountains, of some sixty or seventy square miles; Argos being most central, and Mycenæ furthest inland, but still not more than twelve miles from the sea. Such close proximity of independent cities is certainly quite consistent with the genius of the Greek nation as known in history. In practice, as in theory,—from the earliest recorded ages to the date when Plato and Aristotle disserted on the best constitution of republics at the very eve of the empire of Alexander, the Greek clung passionately to the independence,—the political autonomy of individual towns. Jealousy of this independence made them almost as incapable of loyal and permanent confederation as restiff under foreign control. It is quite in historical times that Tiryns and Mycenæ lost their independence by the growing power of Argos, and then the conquest could only be secured by expulsion of the citizens and destruction of the cities.

The architecture, again, gives us a brief summary of what may have been a very extended history. The walls of Tiryns are the most stupendous, and present in some respects the rudest examples of Cyclopean construction. For the most part they are formed of huge blocks, unshaped, and in no regular courses. Pausanias, with some patriotic exaggeration, thought it hard that Herodotus should imply that such works were insignificant in comparison with the Egyptian labyrinth and pyramids. Other portions of the defences, however, are formed of stones scarcely smaller, and equally irregular in size, but still rudely squared, and with an approach to regular courses. It may be questioned whether this was not an anterior style, so to call it, to that which is found at Argos and parts of the wall at Mycenæ, where huge polygons of various forms are arranged without regard to courses, but neatly fitted. One peculiarity of the fortification of Tiryns consists in the line of walls in some parts being triple, with double passages in the intervals, and covered in by the top stones, projecting to meet overhead. In one part the outer wall is interrupted at regular intervals, so as to form a kind of rude open porch or portico. These galleries are built of stones roughly squared, and the huge masses that project above have their lower angles cut off, so as to relieve the weight, and with the effect of producing a corridor with a false pointed arch.

When we turn to Mycenæ, we find the walls on either side of the road which leads to the Lion Gateway built of stones of smaller size than those at Tiryns, squared for the most part, and with horizontal, though not continuous, beds, and, as a consequence, without constant regard to covering alternate joints. No doorway appears to be standing at Tiryns, but in the doorway which is surmounted by the sculptured lions we see that reliance on the value of an enormous stone in emphasising the dignity which found expression in some entrance-doors of the most finished Hellenic temples,—as notably in that of Ephesus.

This lion gateway admitted to a lower acropolis, a spacious enclosed forecourt or barbican of the upper, and of which the general position will be familiar to most from the recently-published views and plans of the excavations. The enclosure was occupied originally partly by structures of which the foundations declare them to have been divided into passages and chambers, and to have belonged to the same general epoch as the surrounding walls; and the distribution of these betrays one of the two structures which can be thought of in such a position; they are assignable, as Dr. Schliemann decides, not to a temple or sanctuary, but a palace. How far a sacred character may have attached to the site all the same is still a point that we may waive the responsibility of deciding, when we remember how the tutelary Athene is represented by Homer as retiring to "the strong mansion of Erechtheus" at Athens.

Intermediate between the building and the entrance, Dr. Schliemann found the double circle of upright slabs, which once had been surmounted all round by flat stones, and so formed an inclosure to which one opening was left,—of what absolute height from the original level does not appear, but possibly at no greater than would allow them to be used as seats. That these were the actual polished stones which we read of as dignifying the seats of judges in early days, before judicial functions were committed to multitudes of dicasts, we cannot suppose; the place of such would probably be within the circle. But a very pertinent notice has been drawn by Mr. Paley from a very out-of-the-way authority, to the agora of Mycenæ, where a formal trial, that of Orestes for the slaughter of Clytemnestra, was conducted on the Acropolis. Such an agora,—such a place literally for public speech,—we may safely assume this circle to represent. It is a precise representative of that "sacred circle" within which the Homeric judges sit on seats of "polished marble." In the "Odyssey" we find that the seafaring Phæacians have an agora constructed,—that is, architecturally disposed and put together,—at the port. Here Alcinous and his guest, Ulysses, take their seats upon the "blocks of polished marble,"—the seats of dignity, and the herald summons the subordinate princes and people to attend.

The adoption of a situation for an agora like this at Mycenæ for the transaction of the chief business of the community is not without significance in respect of the seat of the strong power that controlled it; it expresses the fact that the rulers held at least their domestic court,—their king's bench,—like our own early kings, in connexion with their residence; nay, even that men of speech as well as action, they were true antecessors of the kings of the "Iliad" and "Odyssey," as by no means exempt from an admitted obligation to address a council, if not an assembly in public, and, perhaps like them, absolute as they might claim to be, to manage a public opinion that sometimes would not be managed without exacting a compromise.

It is now of the first importance to observe that this "sacred circle" of the agora attaches itself most positively to what we will call for convenience the Cyclopean period, inasmuch as while part of it is based on the native rock, another part is carried on a Cyclopean wall, which was built specially to prepare for and sustain it.

It was within this circle, as is well known, that the tombs and contents were discovered by Dr. Schliemann, of which the full details are awaited from his hand with such lively interest. Their position clearly recognises that of both the stone circle and the palace, but how far the circular area can have been used and frequented as a proper agora after these graves were established, whatever was the case before, may appear the more questionable, as doubtless there was originally some erection above them. Otherwise, their position before a royal palace as graves of royal personages is justified by a citation from Pindar, which is also due to Mr. Paley.

So far as at present appears, there are no monumental particulars available on which to found a presumption in favour of one date rather than another for the origin of these graves, within the wide-extended period from the building of the Cyclopean walls far downwards into the Achaian. It has not appeared that any of the ornaments or engraved objects that have been given up by the tombs betray any distinct relation to the sculptured lions and the symbols that are associated with them. It may be readily and heartily conceded to the discoverer that his sagacity is vindicated by the result, in inferring from the words of Pausanias that the tombs of Agamemnon and his companions were to be found within the Acropolis; but we must claim to be allowed to refer to them as the ascribed rather than the positively-certified tombs, until some overt proof is given to attach them even to the age which is represented by the tale of Agamemnon. Pausanias only reported a tradition which had traversed too many centuries to have escaped the usual contingencies of traditions; and it was very much that they should have proved right even in respect of the existence of some tombs without claiming exactness as to whom they pertained to.

To return to the consideration of the construction of the walls: the triangular void over the gateway of the Acropolis, which is filled up by the single sculptured stone, was manifestly designed to relieve the pressure on the architrave. Considering the strength of this stone, the precaution seems scarcely necessary, but even were it known to be so, the tradition, or let us say the fashion derived from anterior weaker constructions might be too well established to be trifled with,—might be willingly taken advantage of as an opportunity for ostentation or for ornament. The form of the opening was obtained by the successive advance of the stones from either side obliquely, till at a certain height they came together; this is therefore another application of the principle that produces the colossal arches of the galleries of Tiryns, and so far evinces the connexion of the two sets if not two ages of builders. Occupied as it is, we may say that it is entitled to the honour of a precedent for the glorious pediments and pedimental decoration of the Parthenon and Phidias.

A still more important application of the principle was in the construction of the subterranean chambers called treasuries, of which there were several at Mycenæ,—among them one which seems to have been the largest and most elaborate, as it is still the best preserved, which goes by the name of the Treasury of Atreus. These were built of circles of comparatively small stones in regular courses, each course advancing inward somewhat beyond the other, until at last the dome-like cavity could be finally covered by a single stone.

Besides this general application of the primeval principle of construction, these treasuries declare their affiliation to the art and style of the Cyclopean builders of galleries and lion gateway by retaining the feature of a colossal architrave or lintel of the entrance with a discharging triangular vacancy above. The same construction is repeated in the Treasury of Atreus in the inner door-way to a rock-cut chamber.

As in the galleries of Tiryns, the projecting angles of the courses were cut off so as to produce a smooth continuous surface. This is set with small bronze nails, which are no doubt rightly interpreted as evidence that the interior was once lined with metal plates, which individually could not have been very heavy. Legend gives us hints of such a reminiscence in the story of the bronze tower in which Danaus vainly secluded the mother of Perseus, and then in the grotesque tale,—so grotesquely represented on the vases,—how Eurystheus was alarmed at the Erymanthian boar which Hercules, in obedience to his own commands, was bringing in alive on his shoulders, and retreated to hide himself in a brazen vase.

Metallic casing is specified by Homer as among the enrichments of the house of Menelaus; and at Sparta in after times one of the most archaic and venerated temples was that of Athene Chalcioikos,—Athene of the house of bronze. Dr. Curtius states that structures analogous to these treasuries were found at Sipylus, in Asia Minor, whither the Pelopid Atridæ traced their ancestry. He withholds a reference to certify the averment, and considering our experience of the relation of some of his historical inferences to authorities, we have really no delicacy in suspending opinion. Various fragments of either bases or capitals of columns and slabs of coloured hard stone sculptured with spirals and discs, have been brought from Mycenæ, and recent excavations have furnished more, which are said to have been found at least

in connexion with these treasuries and their doorways. With precise information which we trust may now be forthcoming as to the possible application and connexion of these fragments, they will be valuable pieces of evidence indeed.

Here, again, we are afloat upon a sea of doubt when we begin to cast about for proof that will satisfy us, one way or the other,—either that these strange structures must need have been among the works of the Cyclopean builders,—perhaps among their last achievements, or perhaps only elaborated continuations of their principles of construction that survived to be employed and developed by their supplanters or conquerors. And so we are led back to consider the pretermitted subject of the group of sculptured lions which stands mysteriously between the remoter and the seemingly less remote remains,—is distinctly attached to some of the most archaic, the colossal masses of the Acropolis avenue and wall, and yet, in other respects, is more distinctly in affinity to the coming art of Hellas, than anything we have hitherto met with.

This world-renowned group stands at this day as it was seen by Pausanias, to whom we owe our earliest notice of it, and where it was doubtless seen by Æschylus, and there is as little doubt might have been seen by Homer. It is sculptured in bold relief upon a single triangular block, some 10 ft. high, surmounting the mighty portal which admits to the enclosed area containing the circular enclosure with its graves and, as we have assumed, the primæval royal palace. In the centre, and reaching quite to the summit of the stone, is a massive column raised upon a basis, of both of which more is to be said. A pair of huge beasts stand one on either side, with their fore-paws resting on the margin of the high basis, so that their heads are lifted to a level with the capital of the column, and the outlines of their backs follow closely the slope-lines of the enclosing triangle. The heads of the animals are lost, and as the space above the fractured necks would not be large enough to admit them, it is clear that they must have been presented apparently somewhat sideways and outwards, but in effect still boldly to the front. The advancing stones behind would not allow of the heads being turned outward and fully back; whether they were formed of metal and fixed on, as we believe Dr. Schliemann has suggested, or, as seems to us more probable, were carved out of the same block, must perhaps always remain an open question. The present account of the group takes for guidance, in addition to the notices of Colonel Mure and other travellers, the careful drawing from a cast which is published and commented upon by Herr F. Adler in Gerhard's "Archæological Journal for 1865." The commentary is well worth consulting, and we are indebted to it for many suggestions, and even when we diverge most widely, not to say differ most absolutely.

The two creatures,—the titular lions,—are even far less like a natural antitype than any of the heraldic supporters which, in attitude and apparent function, they so oddly resemble. In any case they might both seem rather lionesses than lions; they are without any indication of manes, either as sculptured or in smooth projection, that would admit of definition by painting; so their tails are long, but by no means long enough, and thicken gradually to the rounded end, which contradicts any suggestion of a tufted termination. Again, there is lacking that marked contrast in weight between the fore and hinder quarters that is so characteristic of the lion; though a certain tenuity of the flank and belly is rendered appropriately enough.

Still the expression of the creatures in general form and attitude is sufficiently in harmony with what ancient art, no less than Mediæval, understood as leonine, to justify us in allowing that lions they were intended to be, and may remain, as, after all, they are more like lions, especially in the strongly-pronounced anterior limbs, than any other animals we could bring into comparison of consistent bulk. The monumental lion, from that of Sir Edward Landseer upwards, has ever asserted his independence of slavish realism.

The artist, whoever he was, and of whatever time, who executed the paired lions of Mycenæ, succeeded in producing no mean or trivial types of vigilance and force. They stand manifestly as guards of the column which is between them, and all that it may signify. There is a solid assumption of position in the firm parallelism of their lifted fore-quarters, while the alternate action of their hind legs retains a reminiscence of a recent advance and up a gentle incline to the post which they finally occupy; there is just enough indication of movement, and not so much as to be inconsistent with, or to disturb, the confident repose of the challenge that is implied by the alert presentation of the heads.

As regards execution, the sculptor evidently had more power or more passion also for sweeping lines and broader surfaces than for minute details; the intention to emphasise joints is displayed with something of the exaggeration of the Assyrian sculptors, but the paws, on which the Assyrians laboured lovingly, are here quite rudely treated. An odd dewlap-like projection evidently represents the muscles of the breast, thrust together under compression of those of the legs in their strong tension. There is a certain contrast between the two figures,—apparently in favour of that to our right,—whether due to design or accident, to a different hand, or improvement of the same hand, as the work went on.

Carp, then, as some may be inclined and must be allowed to do, at much that is rude and something that is grotesque in detail, it must be admitted that in general spirit these fronting lions are grand, impressive, and suggestive of a thoroughly masculine, a majestic tone of mind in the original conception. So far it must be said that they are not out of harmony with the characteristics of the more advanced Cyclopean walls whose builders were credited by Pausanias with the sculpture of a head of Medusa, which in his time was at Argos. For the rest, were it not for that certain air of distinction and dignity combined with energy which might be Hellenic, the work might seem equidistant from the style of Europe at a later date, as from that of Asia. The reservation is very important, and must be extended when we come to examine the design of the intermediate column. Otherwise, the combination has decidedly an Eastern character, and we are equally carried to Asia, whether we are reminded by it of the paired lions of Assyrian ornamentation, the lions attendant on or controlled by Phrygian divinities, or by Ephesian or Persian Artemis, or by the guarded monuments of Sassanid coins.

But as regards the guarded object in the present instance,—here we come upon a link which seems to unite irrefragably the sculptors of this Cyclopean monument with the development and history of Greek art, in its strictest sense. The column, or rather engaged or semi-column, has a shaft, which, rising from a very shallow base of rounded profile, increases upwards, but less than is shown in many engravings, and is crowned by a capital of which the mouldings represent pretty accurately those of the Attic base in reverse order; in fact, if we turn the column upside down, making the present capital the base, we have presented to us a bold torus, duly divided by a well-marked scotia, or filleted hollow, from another smaller torus, which is surmounted by a narrow fillet,—the rudiment of the later apophyge of the shaft, its rapid widening out above the base; the shaft itself now diminishing normally, that is from below upwards.

Above the capital we have the segment of a peculiar entablature which demands attentive study,—so frequently has it been misconceived; a plain block representing an architrave is surmounted by four discs in contact; the circular outlines of those at either end are continued on the return as sides of cylinders; and it thus appears that they represent the ends of poles laid close together, with a blocking course above them, the combination which gave the most characteristic feature to the Hellenised architecture of Lycia. (See Fergusson's "History of Architecture" for fuller exposition.)

The illustrations of the orders of tombs in Lycia, published by Sir Charles Fellows and other travellers, exhibit the marble or stone imitation of this form of wooden construction in various stages. The coincidence, therefore, must be accepted as certifying that some measure of truth underlies the ancient fables which treat of intercourse between the plain of Argos and Lycia,—of the Lycian wife of Prœtus, who ruled at Tiryns,—of the building of the walls at Tiryns by Cyclopean labourers from Lycia, according to Strabo, and even as Pausanias could report, of the lion portal of Mycenæ itself. We must wait until Lycia has been far more thoroughly explored before we can be quite safe in assuming that there is no truth whatever in the story of Cyclopean works of primitive and imitative character in that country.

However, the fact is already declaring itself that in the Cyclopean remains which exist about the gulf of Argos, we have but the skeleton of an organism from which all the filling up and finish have been stripped away. Various architectural fragments have been found at Mycenæ, of sculptured slabs of hard stone which exhibit details that affiliate on the lion portal, but of which the precise assignment is undetermined. We read of semi-columns found in the treasuries, but are uncertain whether they may not be fragments of symbolical columns that once had the same relative position over the doorways as the lion-guarded semi-column. Attempts have been made to restore one column from fragments of a diminishing shaft and an ornamentally-sculptured torus;—it is a question, again, whether the restoration as propounded should not be inverted, and the apparent base be recognised, as in the antitype, for the original capital. One flat slab from Mycenæ in the British Museum exhibits a row of discs which are so far a continuation of the analogy. Parallels to the spirals which constitute the leading elements of the other ornaments must probably be sought among the remains that Dr. Schliemann will soon put before us.

It is important to notice that the surmount of the column is so carried up to the covering stones above as to preclude any theory as to it having represented either a fire altar or any of one or two other of the objects that have been desperately guessed at. It is a column with entablature pure and simple,—less probably as an emblem than a representation, a representative at most, of a given object. Before we speculate on what this may have been we must examine the basis on which it stands.

We can only agree with Herr Adler that this represents a double seat or throne. The semi-circular recess on either side of the column answers symmetrically to the divisions below. It is reduced in dimensions, no doubt, and kept flat, to accommodate the exigencies of the subject above and of relief in this position; but otherwise the plan and the carved recess below have a marked general correspondence with the seats of later times,—indeed, of all times. If a throne then,—certainly a royal throne or its symbol,—the united throne of a royal pair,—of monarch and consort,—or less naturally of monarch and assessor or guest. In the "Odyssey" Nestor at early morning takes his seat on the polished stones in front of his lofty portal, sceptre in hand,—the seat which his father Neleus before him had been wont to occupy, "a counsellor equivalent to the gods." To ancient imaginations as to modern the throne was a still more impressive symbol of majesty than the crown,—and this feeling is implied, however grotesquely, in the image which Nausicaa presents to Ulysses of her father on his throne.

> "Seated whereon he quaffs off his wine just like an immortal."

Her representation of the scene is, however, quite to our purpose. Ulysses, she tells him, will find her mother Arete seated in the reflection of the fire, engaged with her spindle, as she leans against a pillar, and her father's seat near her in the glow of the fire likewise; this is in the *megaron*, the great hall of the palace: so when Ulysses, in a similar chamber, is awaiting the recognition of his wife Penelope, he sits by a tall column, while she, not yet fully assured, sits, not by him, but opposite to him by the wall, the fire between them. A painter at Pompeii, taking liberties with his prepositions, seats Ulysses not by a column, but on the shaft of one that lies prostrate.

The column of the lion-portal may, therefore, be regarded with equal appropriateness either as the column of state in the great hall of a royal palace, or at the entrance of the palace. It is a natural symbol in either case of stability,—of that security of the royal possession and seat which the guarding lions no less naturally declare to be under the assured protection of vigilant courage and force.

Of lions as emblematical guards of palaces and thrones, history and figured antiquity are full, from early Egyptian monuments to those of Nimrod, of Persepolis, including the recorded ornaments of the throne of Solomon, and the portentous protector of the Acropolis of Sardis,—thought fair material for history by Herodotus.

To which of the epochs of the history of Mycenæ, as tolerably sharply distinguished, at least, in mythology, the lion sculptures are to be assigned is perhaps more difficult to decide than important to discuss. The Lycian detail points to the Perseid period, and seems a fairer presumption than is supplied by mere Pelopid associations with the lion mythology of Lydia. The origin of symbolism of this class, however,

with one dynasty, by no means precluded its adoption by another that succeeded, whether, by inheritance or conquest,—by no means precluded considerable modifications in the process of transference.

But what protection can now be given to this somewhat matter-of-fact elucidation of the sculptures against the opinion which has in its favour a very considerable *consensus* of learned men, from Müller and Gerhard to E. Curtius, that the pillar is nothing less than a representative of the God Apollo,—of Apollo Agueus,—that is, Apollo as the guardian of streets and doorways?

Admitted it must be that pillars,—albeit specified as pointed,—were familiar in Greek cities as sacred to the god in this character, and even as the scholiast of Aristophanes assures us, as the god himself; and this type has been recognised on coins of Ambracia. The matter seems brought closer home when we hear the exclamation of the Cassandra of Æschylus as, after foreboding the murder of Agamemnon, she rushes to meet her own fate into the palace of Atreus,—

"Apollo, O Apollo!
Thou way-god! my destroyer!
Ah! whither hast thou led me? To what roof?"
A. Swanwick's Trans.

But all that can be admitted in the case is, that the contemporaries of Æschylus may have recognised such an indentification, without regard to the confusion they introduced between the most widely-separated epochs of symbolism. Half the value and instructiveness of this primæval monument will be forfeited if we do not recognise, in its simple reliance on a pure constructional symbol, the expression of a period anterior to that movement, which did not rest until every such symbol on the soil of Greece had been endowed with personality, with passions, with a history, and ultimately with an approach, at least, to human forms and features and members to correspond. Some cases of arrested development remained to very late times. Pausanias found simple stones in several places, with the titles and honours of gods, even of Love, and the Graces, and Zeus; in one case, a group of some thirty square stones, each with a divine name. The most familiar example of a stage of development somewhat in advance and fairly on its way to a far higher, is the square stele, with the head and attributes of Hermes, and figured antiquity supplies a whole museum of such instances in every stage of transition. The not less familiar figure of Ephesian Artemis is a highly-sophisticated symbol, but still retains the columnar form, without disguise. The Trojan Palladium, as described by Apollodorus, and shown on vases, is somewhat simpler. But the most remarkable example of which we have a detailed account on proper Greek ground was the figure of Apollo at Amyclæ, in Laconia. Pausanias guessed the height of this as some 45 ft. It was of rude archaic workmanship, and except for a helmeted head, and extremities of hands and feet, did not differ in appearance from a bronze pillar. The Christian Father, Clemens of Alexandria, preserves some verses which refer to the archaic figure of the Hera of Argos as merely a tall column.

Thus the records of Greek antiquity contain evidence of objects regarded with every variety and degree of veneration, as more immediate evidence or as absolute seat of divine power, as sacred by long-continued associations, or sanctified in a sense which the later Greek was ever eager to admit, as appealing to the sense of dignity and awe by true poetic impression.

That the pillar of Mycenæ, then, was originally designed either to represent a god or the direct symbol of a particular god we are by no means justified in assuming; but that as time went on it was likely to be assumed by lively imaginations tending ever in a certain direction, as either one or the other, is scarcely to be denied. From this point of view the columnar Apollo of Amyclæ becomes interesting from its associated objects that seem to have owed their strange juxtaposition to some anterior grouping like that before us. The bronze pillar god was erected upon an altar, above and around which was a throne of most elaborate workmanship decorated with a multitude of subjects and figures both in relief and in the round; the seat of the throne was divided into spaces, as if for several occupants, with an interval between each. In the central recessed space, which was wider than the rest, as if for the god to take there his seat, the columnar figure rose upright.

We cannot but believe that the elaborate throne of the sculptor Bathycles was in substitution of one of ruder construction, and that even the figure of Apollo, archaic as it declared itself to be, was a substitution of far earlier date, as its style declared, for an object of reverence more archaic still, the entire combination having originally started from even such an arrangement of naturally significant symbols as we have preserved to us in the lion portal of Mycenæ. If any associations of divine, or rather of demonian, nature were originally connected with this group, we should conjecture them to have attached to the guarding beasts; such, at least, might be the natural feeling of a listener to the singer of the "Odyssey" as to give splendour to the palace of Alcinous, he adopted, but heightened poetically, the familiar details of the royal seat of gold-abounding Mycenæ.

"Of gold were the leaves of the doors that closed in the firm-built mansion,
And of silver the jambs stood upright fixed in the brazen threshold;
And of silver the architrave over,—the cornice, too, was golden;
Dogs were there, one on each side,—of gold one, one of silver,
The same which Hephæstus had wrought with deep inventive cunning,
Ever to guard the house of Alcinous, large-hearted;
Immortal they were, and exempt for all time from age's inroad."

The colossal walls of the Acropolis of Mycenæ and those of the cities around tell plainly of days when kings had to look out from their strongholds beyond more than one frontier, when jealousy was only lulled, not killed, by the closest alliances, and subject populations were kept at exhausting labour to prepare a bulwark against contingencies of violence. The one great plastic monument that remains carries back our associations, on the one hand, to those supposed Pelasgic times, when, as Herodotus tells us, men had not yet invented or imported the names and attributes and fables of later Greek mythology; when they were content to worship the gods under a general name expressive of a common origin for all the established order that was visible in the course of nature; this in one direction; but in another, as we have seen reason to infer, the design which we have studied comprises no equivocal indication that the rulers and the people who were here engaged in attempting to solve what might seem the most rudimentary problems of civil society, were yet akin to the tribes, which, as Hellenes, went so far toward carrying society to the utmost perfection that it is susceptible of, and certainly set it well forward on that way which it is still toiling painfully along.

THE PUBLIC USE OF CHURCHYARDS.

IN the Consistory Court, on the 28th ult., before Dr. Tristram, Chancellor of the Diocese of London, an application was made by the vicar and churchwardens of St. Barnabas, Homerton, to appropriate a part of the churchyard for a public way, and an important question as to churchyards being used for public purposes was involved.

The application was for a faculty to widen a narrow road called Brookly's-walk, abutting on the end of the parish churchyard, and being one of the roads leading to the church, by placing back the wall of the churchyard 3 ft. 9 in. The churchyard was consecrated in 1845, and closed for interments three years ago. There were no graves in the portion proposed to be appropriated, and on account of the increase in the traffic the road at that point had become dangerous, as two vehicles could not pass. The churchwardens had no funds to erect another wall, and the local Board had offered to spend 200*l.* in making a new wall with railings if it could be legally carried out. The vicar had joined in the application, and the Bishop of London had approved of the plan.

The learned Chancellor, in giving his decision, after narrating the circumstances, said he had a strong inclination in favour of the application if it could be granted with due regard to ecclesiastical principles and previous decisions. He referred to the case of "The Queen *v.* Twiss," in which Lord Chief Justice Cockburn laid it down that, when ground was once consecrated and dedicated to sacred purposes, no judge had power to grant a faculty to sanction the use of it for secular purposes; and that nothing short of an Act of Parliament could divest consecrated ground of its sacred character. He accepted the law as laid down by his lordship, and the consideration in the present case was whether a strip of ground not required for interment could not be utilised for the public way, for the convenience and safety of the parishioners. Faculties had been granted for footways in churchyards, and in numerous churchyards there were footways. No doubt applications had been refused when churchyards were still used for interments; but now traffic had increased, and roads, which were formerly sufficient, were found inadequate. Therefore, although he did not alienate the portion required, and if at any time it was not needed it could revert to the churchyard, still he felt it to be his duty, for the benefit of the public, to grant the application.

Lewisham Park Estate.—Messrs. Bonner & Mills have been appointed, after competition, architects for the houses to be erected on the Lewisham Park Estate.

UNEARTHED HISTORY.

IT has been somewhat of a surprise to archæologists and antiquaries that in the excavations of the New Avenue de l'Opéra so few buried historical records of the past should have been brought to light. Here and there a few *louis d'or* of recent date have been found, but positively no treasure of any absolute value or interest has been discovered. On the Champs de Mars and the Trocadero, notwithstanding the primitive condition of the ground, no remains whatever of early human work have been brought to light; but to make up for this loss the engineers have come across most valuable quarries of building stone and gravel sufficient alone to supply the enormous requirements of the building.

The other day, however, in excavating the new carriageway which passes before the façade of the Tuileries, the workmen came upon some remains of the kilns in which for centuries had been manufactured the tiles for which Paris has so long been famous. If any doubt can remain as to how the Palace of the Tuileries obtained its name it is completely dissipated by this discovery of the remains of the tile-kilns (*tuileries*), from the fact of whose existence the property took its name.

For a long time past the exigencies of the traffic between the right and left banks of the Seine,—that is, between the Boulevards and the Pays Latin,—have led to a demand on the part of the public for some new thoroughfare, in addition to that provided by the Place du Carrousel and the Place de la Concorde. At last the municipality have taken up the question, and the want is shortly to be supplied. Much to the rage of the Monarchists and Bonapartists, the old footpath through the garden of the Tuileries, running along the whole façade of the palace, is going to be transformed into a carriage thoroughfare, and thus a great part of the traffic between the two banks of the Seine will pass before the palace through the old private garden, which only within this century has been opened to the public. When we consider that this thoroughfare will lead into the new Avenue de l'Opéra by the prolongation of the Rue des Pyramides, it will easily be seen how important a road it will become, and numbers of persons to whom the opposite bank of the river to that on which they live is practically a *terra incognita*, will be led to make more frequent excursions across the river.

With the ruins of the palace transformed into a museum, and a broad, busy thoroughfare before it, no wonder that the Monarchists and Bonapartists cry out against the new decision of the municipality, for away then fly all hopes of the once famous Tuileries being again a palace, royal or imperial. In the mean time the new street is rapidly progressing, and by the time that the famous old orange-trees, many of which date from the time of Louis XIV., are brought out again, the thoroughfare will be opened to the public.

It is as far back as the thirteenth century that the tile-kilns referred to previously were established on this spot, then outside the city walls. At the commencement of the sixteenth century the mother of Francis I., the Duchesse d'Angoulême, having found the royal residence at the Palais des Tournelles (on the site of the present Place des Vosges) somewhat distasteful to her, resided at the house of M. de Neuville, built on the site of the present Palace of the Tuileries. Charmed with the spot, Francis I. purchased it, and in 1564, Catherine de Medicis, having determined to abandon the old Palace of the Tournelles, charged Philibert de l'Orme with constructing for her another residence on the site of the "Maison des Tuileries." From this time, then, the Palace of the Tuileries rose, stone by stone, and began to take a place in French history. There, as each monarch succeeded to the throne, the Court passed some portion of their time. During the reign of Louis XIII. there existed in the gardens of the Tuileries a *restaurant*, kept by one Renard, and there, during the difficulties of the civil war of the Fronde, met a great number of the principal personages of the insurrection.

It was in this same house occupied by Renard that, towards the end of the year 1640, the famous painter, Nicholas Poussin, ever in search of that retirement and seclusion from the busy and to him distasteful life of Paris, was installed by the orders of Louis XIII., and there he remained till his final return to his favourite and congenial adopted fatherland, Italy.

Paris.

DESIGN AND SUPERVISION OF BUILDINGS AND PUBLIC WORKS.

WE have called attention on former occasions to the detriment to which the architectural beauty of London has been not unfrequently exposed from the want of some controlling authority, which should regard not only the convenience of any invading railway company or private builder, but the *ensemble* of our street architecture, and the imposing effect of our principal public places. The want of some such authority is shown, for example, when such enormous elevations as the wagon-roofs of the Charing-cross and Cannon-street stations have been allowed to soar into the air, to the utter extinction of any sense of scale or possibility of pictorial sky-line in the vicinity so afflicted. Again, it is but a few weeks ago that the correspondence printed in the columns of the daily papers afforded positive proof that the largest work of a character partly architectural and partly engineering that has as yet been executed in London, was undertaken without any adequate study of the effect which it would produce on the channel of the Thames. The arguments which were brought forward on behalf of the Board of Works to show that the quay-wall and embankment on the north side of the river could not in any way augment the flood to which the unfortunate inhabitants of Southwark and Lambeth were exposed had at least that force and upshot. It may be, and no doubt is, very true that the quay wall was not the primary cause of the floods. But it is certain, from the arguments which were brought forward to support this view, that the subject had not been properly investigated in the first instance, and that if it had been investigated at all it had not been approached with an exhaustive knowledge of either the facts or the principles of the case.

There is no doubt that a very strong reluctance would be felt, and we think not unnaturally felt, in many quarters at any proposal which might be represented at an attempt to appoint a "Minister of Taste," or a Secretary of State for the Fine Arts. A communication in our last number calls attention to certain serious inconveniences which have already attended the expenditure of public money in this direction. And, after all, with regard to the metropolis, the examples to which we have to refer as to the manner in which our Continental neighbours look after their public works are not directly in point. While a care and thought have been bestowed on the adornment of Paris, St. Petersburg, Turin, and other cities, of which the absence is very conspicuous in London, the Ædile who takes charge of architectural requirements in these countries is not a Minister of State. He is usually a municipal officer. And in our own case the absence of any such functionary is probably due rather to the irregular growth of our metropolis, and to the want of any comprehensive municipal organisation for the whole of London, than to any more recondite cause. The want of functionaries of this kind, who should exercise a wholesome influence over the whole great brick and mortar province of the metropolis, is only one of the many anomalous and inconvenient results of our love of independence, as it is shown, carried *ad absurdum*, in our parochial systems.

We have now, it is true, district surveyors, to whom is entrusted the duty of attending to the enforcement of the provisions of the Building Acts. But all are not aware that it enters into the attributions of these gentlemen to hold common council. They meet occasionally as an association, and if they were headed and represented by a chairman, and had some additional powers, the simplest approach to what every architect must admit to be desirable would probably be thus made. But the first steps have yet to be taken in that direction. We apprehend that the struggle with squalor and scamping, and the resistance to infringements of sanitary regulations, or of the prohibitions as to the erection of unsafe dwellings, must occupy the time of these gentlemen too fully to allow them much leisure to think of combined efforts for promoting the architectural unity and beauty of London. However, we offer the suggestion for what it is worth. That some directing or controlling influence, bent to the pictorial and architectural preservation of our street architecture, is desirable, we think few men of taste will deny. As to the means to be taken towards this end, there is much that remains to be done before any thoroughly good suggestion is likely to be made.

It is, however, otherwise with regard to those matters which directly affect the public service and convenience. As to architectural beauty, there will always be room for difference of opinion, for doubt, and for dispute. But as to engineering fitness, the grounds of hesitation are far more restricted. The only admissible cause for doubt as to an engineering scheme is ignorance; ignorance, more or less complete, of what are the facts, of what is wanted, and of what will be the real effect of the measure suggested.

We propose to inquire for a few minutes into the mode in which our more important Continental neighbours, the Great Powers of Europe, provide for the superintendence of their respective public works. This is for the most part done by a special Ministry, devoted to that end. There is good reason to believe that this is not only the most efficient, but by far the least expensive method. And its indirect advantages are even greater than those of efficiency and cheapness; for one great function of the Minister of Public Works is to supply to the public with the greatest freedom that full, accurate, and co-ordinate information which it is so impossible for any one to obtain in this country. Not a session passes that Parliament does not pile up returns moved for by private members, which for the most part are tossed into the waste-paper basket. Associations formed to carry out public works have to collect information at their own cost. Sanitary authorities have to sit down bewildered, in the want of any efficient guidance or instructions. Over and over again we collect partial details, which there is no machinery for welding into an available statistical whole.

We have one exception to this, and that is an exception so brilliant that it may be well wondered at that we have made no effort to extend the application of so fruitful a principle. We refer to the Ordnance map. This is an excellent instance of the mode in which general information of an exhaustive kind can be collected by the care of the Administration, and rendered fully and freely available, at a very moderate price, to all persons concerned.

The amount set down in our Civil Service estimates (for 1875) for public works, is 1,442,345*l.*, which comprises 150,043*l.* for the maintenance of palace and parks. This sum, however, does not include any cost of the Postal or Telegraphic Service, or of that of marine communications,—the packet service. These three items amount to 4,888,000*l.*, and raise the State expenditure on account of public works to 6,330,000*l.* per annum, or about 8¼ per cent. of the national expenditure. But this is very far from representing our national outlay in this matter. The local burdens are numerous, heavy, and everywhere increasing. Very many matters which, in foreign countries, are either supervised or actually executed by the State, are carried out in England by public or private companies, over which, slowly and reluctantly, the Administration is finding itself compelled to exact a supervision. Thus a railway expenditure of thirty-three millions a year is attended to by the Board of Trade, on the principle of shutting the stable-door after the steed is stolen; that is to say, of inquiring into the special cause of any fatal accident, instead of grasping the whole subject in a comprehensive and scientific inquiry, pointing out the one great vice of the system which is the direct cause of the majority of what are called accidents, and then enforcing such wise regulation as should remove the cause of so much loss of life and limb. That, however, it is left to a private inquirer to suggest, as in the analogous case of the protection of our sailors from unseaworthy ships, with but little result as yet, except sneers from railway managers. Then we have upwards of 20,000 miles of what were formerly turnpike-roads, and more than 100,000 miles of highways, the supervision of which, whether well or ill executed, is a cost to the country; and if it be a stinted cost, is a source of great expense and waste. As to our 4,000 miles of canals, there is no one to look after them at all, so far as the public are concerned. The same may be said of our rivers, of the length, volume, navigability, and other particulars of which we possess no general information whatever. On all these things waste, or cost, or probably both, are annually incurred and increasing, for want of a central and efficient supervision, so that to the 6,000,000*l.* which we may make out from the budget that we lay out on public works, including the well-ordered and lucrative service of the Post-office, we have to add an unknown but very large sum of annual loss, incurred from neglect, ignorance, and want of supervision.

In the Russan empire the twelfth head of the national expenditure is under the control of a "Minister of Ways and Communications." The cost of the administration of this department, that ranks as permanent, is 388,000*l.* per annum. The expenditure on roads, under this supervision, is 520,000*l.* per annum; that on waterways is 93,000*l.* per annum; that on the railways of the State is 22,000*l.* The guarantees to railway companies demand the sum of 1,500,000*l.* per annum. Altogether the budget of this minister, ordinary and extraordinary, exceeds 2,600,000*l.* per annum, and forms about 3 per cent. of the total national expenditure,—of course not allowing for the expenses of a war.

In Austria the department of Public Works forms a subdivision of the Ministry of the Interior. The sum allotted to this service in the budget for 1876 was 647,000*l.* for ordinary, and 262,000*l.* for extraordinary expenditure. But the budget of the Minister of Commerce includes 100,000*l.* ordinary, and 150,000*l.* extraordinary, expenditure for the service of the ports; 1,920,000*l.* for post and telegraphs; while the Minister of Agriculture spends 355,000*l.* in administering the domains and forests, and 471,000*l.* in working the mines of the State. Altogether, therefore, the department of Public Works costs the State in Austria 3,900,000*l.* per annum, amounting to nearly 10 per cent. of the budget of the countries represented at the Reichsrath.

In France, the Minister of Public Works expends 6,444,000*l.* out of a budget of 102,800,000*l.*, or about 6¼ per cent. of the national expenditure. Of this the general administration consumes about 400,000*l.*, or 6·2 per cent. on the outlay under the direction of the Ministry. The roads and bridges cost, for the ordinary expenditure, 1,278,000*l.*; the internal navigation, 384,000*l.*; and the harbours, 225,000*l.* per annum. Guarantees and subventions to railway companies amount to 2,072,000*l.* per annum. But the sums of 2,800,000*l.* for the post, 600,000*l.* for telegraphs, and 480,000*l.* for forests, have to be added from the budgets of other departments, making the State expenditure on the same group of objects as that which we have abstracted in other countries amount to 10,324,000*l.*, or more than a tenth of the entire national expenditure.

The budget of the German Empire is not published in such detail as to allow of an accurate comparison as to this part of the expenditure. The net products of the postal and telegraphic services appear in the receipts, as well as those of the railways. For the former two items, the gross receipts amounted to 59,989,000*l.*, and the expenditure to 54,708,000*l.*, showing a net income of 5,281,000*l.* The railway gross receipts were 1,857,000*l.*; the working expenses, 1,383,000*l.*, showing a working profit of 474,000*l.*, thus making the working expenditure 74·5, and the net revenue 25·5 per cent. of the gross income,—a state of things very far from admirable as regards the management of the lines.

In Italy the attributions of the Ministry of Public Works correspond more closely to what might be expected to result from the economy and centralisation of inspection of such matters in England, than is the case in either of the other Continental states. The postal and telegraphic services are included in the budget of this ministry, and some of the railways are both constructed and worked directly by the State. For the year 1876 the ordinary expenses of this ministry amounted to 2,106,000*l.*, and the extraordinary to 1,651,000*l.* There is, however, an item of 730,000*l.* set down to sanitary service, under the direction of the Minister of the Interior. This, according to our own distribution of expenditure, would come under the control of a department of public works, which would, of course, absorb the present unorganised and imperfect machinery of the Local Government Board. These items united amount to the sum of 4,487,000*l.*, or about 8·4 per cent. of the annual expenditure of the kingdom. But the cost of the Italian ministry is very light when compared to those of other Governments. For the central administration, by the law of 1876, the sum of 30,000*l.* only was demanded. The Royal Corps of Civil Engineers, to the members of which all supervision, design, and to some extent execution, of public works is committed, only receive 76,000*l.* per annum. The total cost, including travelling and all expenses, of the Ministry and the attached corps of engineers, is 143,000*l.* per annum. This is less than 3¼ per cent. on the gross amount of

the expenditure of the Ministry. And it is even a less rate than this as concerns the actual expenditure on public works; for the municipalities and the departments are each compelled to contribute, in certain specified proportions, to the constructing and maintenance of the departmental and public roads. Extreme activity is now displayed throughout the peninsula, in the construction of new roads, according to a general scheme prepared under the sanction of the Ministry. The rivers, canals, and waterways amount to an aggregate length nearly equal to that of the roads. The hydrographic survey of the greater portion of Italy has been completed by the Royal Corps of Civil Engineers; and the remainder is in course of completion. More than 800 private companies for irrigation, drainage, and reclamation of lands exist and are at work; and all the details requisite for the operations have been furnished, while the operations are supervised and controlled, by the same useful corps. In the ordinary budget alone about 360,000*l.* is the given expenditure on national roads. Hydraulic works, including banks for protection from floods, canals for irrigation and drainage, improvement of river outfalls and the like, require the outlay of 346,000*l.* For ports, harbours, &c., 135,000*l.* are allotted. The telegraph service costs 287,000*l.*; that of the Post-office, 775,000*l.*; and the supervision of the railways not belonging to the State costs 16,400*l.* The sum of 84,000*l.* is expended on working railways belonging to the State. Thus in every department of national industry, information, control, and professional guidance are supplied by the State for the construction and service of private as well as public works of an engineering nature. And if the outlay for supervision borne on the ministerial budget be compared with the practical service rendered to the country, we shall find reason to speak in terms of very high admiration of the method adopted for the execution of the public works of Italy.

The outcome of such a comparison (on which we have, as far as we are aware for the first time ventured), is extremely instructive. It is not too much to say that the intelligent civilisation of a nation may be to some extent gauged by the two opposite measures, of the proportionate amount of national expenditure devoted to public works, and of the cost of superintendence of the same. In semi-barbarous Russia we find an expenditure of 520,000*l.* per annum on the roads of an empire extending over 8,365,000 square miles; while a considerably larger sum (we have not at hand the extraordinary expenditure for the year in question, but it does not fall far short of the ordinary outlay) is laid out on the roads that serve the 111,410 square miles of Italy. But the Russian ministry costs more than twelve times as much as the Italian ministry. Italy may better compare with England than any other country. Its area, its population, the industry of its people, the long extent of seaboard in proportion to the area of the country, are all very close upon our own. The presence of coal in our soil, and the happy balance of our political organisation, have given us a great start in the race with our old masters,—a start, however, which every year tends rapidly to diminish. What we can collect from the abstracts of the national accounts, as to the comparative rates of outlay of the two countries, gives 8¼ per cent. laid out in England against 8·4 per cent. in Italy. Neither of these statements is exhaustive. In both countries there is a large local expenditure, which does not come into the national parliamentary budget, while the activity of private capital in the United Kingdom is such as to exceed both national and local expenditure. But when we try to put our finger on the other gauge,—the ratio of the cost of superintendence,—we are absolutely nowhere. It might be an overstatement to say that we come nearer to Russia than to Italy in this respect,—but it would be difficult to prove to how great an extent this was a misstatement. In one case, that of Italy, we have a definite annual expenditure. We see what there is to show for it, and we find that the supervision falls very far below the rate of an architect's commission. The work,—as far as we can check it, and that is to a great extent,—is well done, and the cost is minimised. Now, if we regard all those items of expenditure, national or local, which are going on in every part of the country, inspection of railways,—inspection of mines, inspection of sanitary authorities,—and couple with these the far more costly items of non-inspection of canals, non-inspection of roads, limitation of inspection of railways, and non-assistance to sanitary authorities, we shall be certainly within the mark, if we consider that our want of system costs the country from three to four times as much as the Italian centralisation of system, and that an allowance of five per cent. on all public work bestowed on an efficient establishment of the nature of the Italian Royal Corps of Civil Engineers would be a saving of cent. per cent. to the country in direct cost, and perhaps of a thousand per cent. in avoidance of waste of money, labour, and time.

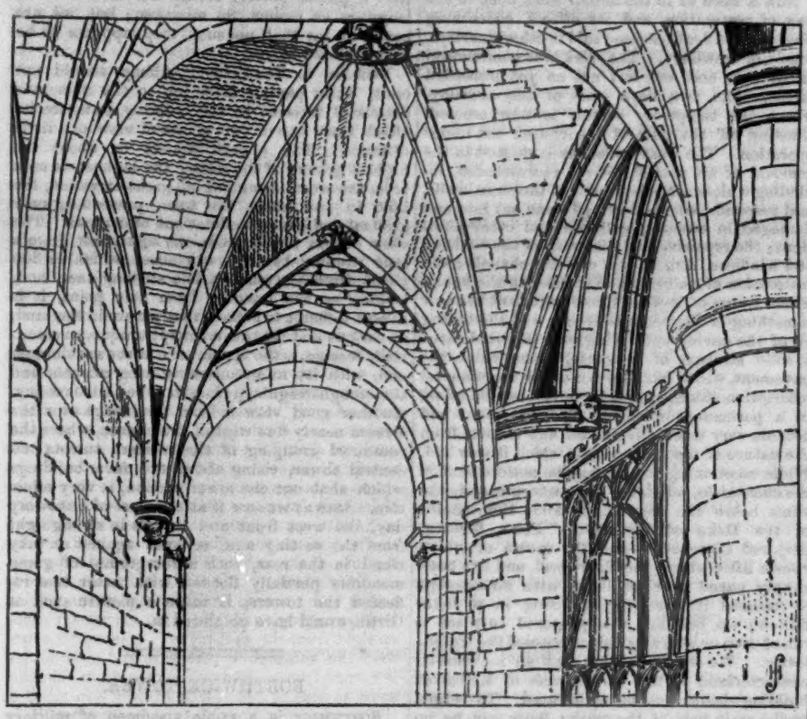
It is true that an extraordinary advantage has been secured to England by the activity of associated industry. The outlay of 630,000,000*l.* on our railways, without any assistance from the State, is an operation without precedent in modern times. When we contrast the receipt by the State, in the form of rates and taxes and of Government duty, of no less than 1,977,000*l.* per annum in the United Kingdom, with the item of 1,500,000*l.* paid as interest for railway capital in the Russian Budget, we become aware of an enormous difference in the industrial activity of the two countries. Again, our working cost of 54 per cent. contrasts very favourably with the higher rate of 74·5 per cent. on the German lines. To know how far this difference is altogether in our favour, however, we ought to know the rates of tariff, and the actual gross income per mile, in the two countries, as in the absence of such information mere comparisons of working ratio are delusive. It has been the policy of many Governments to encourage railways for the general good, by subvention of some kind from the State. We have carried out this policy ourselves in India, with the happiest results. The Belgian Government are carrying it out, as we believe, with a disastrous result. In the Russian empire the support of railways by the State may well be considered almost necessary to the national existence; though how Russia is to continue to pay 5 per cent. in gold on her foreign debt of 300,000,000*l.*, we are at a loss to imagine. But the more active our own expenditure, under railway companies, dock and harbour companies, or the new local authorities, the greater is our national loss for want of thorough and combined engineering direction. We have no love for the interference of the Government in any matter that can be better managed by private energy. But engineering matters, affecting the communications of the country, or the general regulation of its waterways, cannot properly be so managed. If we consider that we have taken fifty years to spend over 630 millions sterling on our railways, this gives an average expenditure of 12,600,000*l.* per annum. Five per cent. on this sum would have amounted to 630,000*l.* per annum. Reduce this by one-half, and we have a cost nearly equal to that of the Russian administration of public works. Can any one for a moment doubt that the railway companies could have paid this sum, out of their own money, with the utmost advantage, to avoid the heavy Parliamentary expenses with which they have been burdened, and the construction of duplicate lines? that the country would have been the gainer by millions a year if an educated tribunal had been substituted, at that cost, for the hap-hazard way in which we scramble through arrangements by the patient and orderly care of which waste, extravagance, and loss of all kinds can alone be avoided?

TEWKESBURY ABBEY.

IN our last number* we had looked at the unrestored portion of the interior, comprising all the nave except the two eastern bays. Passing through the temporary screen erected at this point, we first become fully conscious of the real grandeur of the building, as well as of its exceptional treatment and interest. Here the whitewash is all scraped off, and the original character and tone of the masonry exposed to view. The first thing that strikes one is the grand effect of the blocks of masonry which form the crossing piers, and which are not formed on the principle of a square pier presenting the same face both to the main building and the transepts, but take (on plan) the shape of longitudinal blocks, with their length east and west, finished square towards the crossing, and on the side next the arcades rounded off into a respond to the circular piers, the rounded respond dying into the straight surface of the wall plane, with no line or break of any kind. The effect of solidity and mass thus given is partially shown in our last week's illustration, but must be seen to be realised. The crossing piers are thus, in fact, massive buttresses interposed between the thrust of the crossing arches and the line of the main arcades east and west. Their function in this respect seems to have been a little overlooked in some remarks made at the recent meeting at Lambeth by Sir E. Beckett, who observed that "the Normans knew how to plant a tower; they got all the strength of their piers in the east and west direction, leaving the spaces between the north and south"; but this way of putting it hardly expresses the real constructional point in the case, which is that the transept presents a tolerably solid abutment north and south, when the narrow space of the aisles is once got over, while east and west there is only an arcade. The builders of Tewkesbury saw to it that the thrust of the arches carrying the centre tower should never arrive at or disturb the main arcades: they interposed some 16 ft. of solid masonry between the two: and had such a system been carried out, for example, at Salisbury, we should not now have the spectacle of the arcade all pushed out of the perpendicular by the action of the tower and spire. On the side next the aisles these piers are thickened, to take the aisle arch, with a sub-order on two semi-circular wall shafts; but on the sides next the centre aisles the line of the pier is left completely unbroken, the sub-orders of the east and west crossing arches being turned from corbels at the level of their springing, and the main arches springing straight from the wall-plane. It is worth notice that the sub-arch in the east and west arches is turned from a different centre from the main arch, so that it has a face of only 3 in. or so at the springing, increasing to somewhat near 1 ft. at the crown,—or, in other words, the main arch is stilted to that extent. The difference is most marked in the east and west arches; less so in those of the transepts. The object seems to have been to reduce the corbel at the springing, without weakening the appearance of the arch at the crown. The treatment of the Norman portion of the transept is almost bare in its plainness, the north and south walls, partially occupied on their eastern angles by the square projections containing the stairs, being merely ornamented by two tall, narrow, blank arches, with round heads, without impost or moulding. The transepts and crossing are vaulted at the same height as the nave, with a vaulted ceiling of the same character; but the transept vaults are manifestly somewhat later, approaching more nearly towards the form of the fan-vault, and are besides, weaker and less rich in design than the nave vault. The vault of the crossing conceals the arcades of the Norman lantern, the tower having been formerly open to a much higher point.

So far the architectural ordinance of the church is of one scale and design. Eastward of the crossing everything is changed, and instead of a lofty ground-story, with tall columns, and an insignificant triforium and clearstory, we find a low ground-story, of short thick columns, and originally, in all probability, a large triforium. The original two-storied arrangement may still be seen in connexion with the east walls of the transepts. At this portion of the plan there was on the ground-floor the eastern apsidal chapel so common in Norman churches, and over this a chamber of the same shape and size, the practical use of which is doubtful. In the north transept the apsidal chapel and its upper story have both been removed to make way for the Early English chapel before mentioned: in the south transept the eastern chapel remains in excellent preservation, and its upper story, which had been walled up, has been reopened to the church; so that the Norman design of this transept is nearly complete, excepting the roof or ceiling. But in the choir the building has been perfectly changed. Standing under the crossing, and looking east, we see a short choir extending two bays eastward, and then terminated in a semi-hexagon; a form of plan which allows of a larger eastern bay than the semi-octagon, and so far of a better architectural effect, though the lines it makes are not so pleasing and symmetrical as those of the octagon. We have thus seven bays surrounding the choir, consisting apparently of the short Norman columns, with moulded fourteenth-century capping placed on them, and a deep, heavy fourteenth-century arcade springing from them. Over the arcade is a large and fine clearstory of the same date, but no triforium proper, though the sills of the windows are raised to a certain height above the string to allow

* See page 361, *ante*.



for the aisle roofing. The choir is vaulted with a roof of similar date and style to that of the transepts, but much richer and more satisfactory in design. But a complication in the effect of the main arcade is caused by the singular appearance of the longitudinal arches of the vault over the choir aisle or ambulatory, which are seen through the arcade as segmental arches springing from behind the springing of the main arches, and falling considerably below them at the apex. These are, in fact, what would be the "wall ribs" of the ambulatory vault, if they were against a solid wall instead of an arcade. On going round into the ambulatory, we find that the fourteenth-century caps seen from the centre are not on the level of the original Norman caps; that the Norman columns have been raised about three courses before the Gothic arcade was built upon them. On the aisle side portions of the Norman caps are left, sufficient to form a starting-point for the ribs of the aisle vaulting, which spring from the original lower level. The above sketch, taken in the south aisle of the choir looking westwards, will serve to show the manner in which the later work is joined on to the Norman, and give an idea of the strange jumble of lines and masonry of different periods which this part of the work exhibits. In the paper read before the British Archæological Association at Tewkesbury, referred to in our last article (foot-note, p. 362, *ante*), it is urged that this aisle must certainly have been added when the Norman arcade still stood, and was intended to remain. The only apparent reason we can see for such a statement is that the transverse and diagonal ribs of the aisle vault spring from the level of the original Norman abacus, a portion of which is left to receive them. But this is easily accounted for, both from the desire to keep the vaults low so as to get a large window over, and from the fact that part of the Norman wall on the south side of the aisle is left, with the original wall-shafts, one of which is seen to the left of our sketch,* and it was evidently the simplest way to use these existing caps to spring the vaulting from, and to spring those on the opposite side at the same level. The fact that the arch carrying the inner margin of the vault falls below the line of the main arcade is nothing to the purpose, for it springs from the Gothic cap at the new level, and moreover the backs of these arches, where they are seen through the arcade from the centre of the choir, are mostly ornamented with diaper-work on the portion which, if these arches were built before the Norman arcade was removed, would have been against the face of the Norman wall and entirely invisible. We think, therefore, that the manner in which the old and new work is fitted together plainly indicates that the whole alteration was done at one time, at all events as far as the ground story of the choir is concerned; the upper portion, with the large clearstory windows, may be a little later. These windows contain a larger quantity of original Mediæval stained glass than is often seen in one place; and apparently in unusually good preservation.

The peculiar and unique effect of the choir of Tewkesbury is still further enhanced by the chain of remarkably rich and varied memorial chapels which fill the spaces between the piers all round the arcade. Commencing with the western bay on the north side, we find here that called the Warwick Chapel, a piece of very rich Late Gothic work; the lower portion adorned with figures of angels holding shields, on which extensive remains of colour may be seen, the upper portion finished with very minute and rich canopy work. The ceiling inside takes the shape of a miniature fan-vault, and one half of the area has a second lower ceiling of similar design, in which the fans have sprung from thin shafts rising from the floor, two only of which remain. The next arch eastward contains the chapel of the founder, Robert Fitz-Hamon, which is an earlier and more simple design, with the ordinary characteristics of the Perpendicular style. The second bay on the south side, opposite to this, has a chapel called of the Holy Trinity, of the same date and nearly identical in design; both have imitation fan-groining as a ceiling: the Trinity Chapel shows some remains of wall-painting on its eastern end. In the third arch on the north side is the monument of Lord and Lady de Spenser, remarkable for the lightness and intricacy of its pyramidal canopy, which, however, must have undergone a good deal of restoration and furbishing up to look as it does now. The centre (east) arch is filled with a screen wall, with open tracery work of rather commonplace design at the top; but at the next arch, the south-east diagonal bay, we find the three sedilia, a splendid and sumptuous piece of work, of Purbeck marble, of the best style of Late Decorated design; the arches of the canopies, decorated with a double plane of cusping, spring from substantial richly-moulded piers dividing the seats; great part of the canopies is gone, but enough remains to give a pretty good indication of the nature of the original design.

Let us now go round the chancel aisle, and notice the peculiarities of design and arrangement here. Entering the north aisle from the transept, we first notice on the left the opening into the square Early English chapel which occupies the site of the original apsidal chapel on the east wall of the transept. The transept wall is built up, and the chapel is only entered now from the choir aisle; and through it we pass by another wide archway into the smaller apartment of the same date further north, which adjoins the north-east angle of the transept, and which, as noticed in our last article, has had to be shored and buttressed to keep it in its place. This last-named chapel at the angle of the transept has been a very fine piece of work in the most effective style of late Lancet architecture, and a good deal of the detail remains, though covered with whitewash,—quite sufficient to give data for its complete restoration. In the chapel next the choir almost the only direct evidence of date and style is in the caps of the angle vaulting shafts, which still hang to the wall in their places, though the shafts below and the vault above them are gone; the building having been afterwards covered with a wooden roof, itself now much dilapidated. Both the arches which connect these chapels with each other and with the choir aisle are low segmental arches of Decorated style; and it is evident that these openings were made after the building which formerly ran along the north face of the transept had to be removed owing to its failure, and the arrangement of this part of the church consequently altered. It is as if the angle chapel were a chancel on a small scale, with a small nave on its western side as usual; and we had taken away the original nave and placed another running north and south, and blocked up the original chancel arch. Now, it is just possible that this may be the real purport of the arrangement here. In Mr. Blashill's paper read before the Archæological Association, it is suggested that the small building originally at the north of the transept, and which stood to the angle chapel in the relation of nave to chancel, was in reality an additional lady-chapel erected at this part of the abbey in order to give opportunity for the laity to indulge their devotion to the Virgin, without bringing them too much into the *penetralia* of the Abbey Church. The building would, in fact, play the same part as the Galilee chapel at Durham. We have had occasion to differ explicitly from the author of the paper referred to in regard to two of his suggestions, and therefore take this opportunity of giving him due credit for what appears to us a very ingenious and probable explanation of the meaning of the unusual features in this part of the plan of Tewkesbury. The supposition would be, that when the original nave of this lady-chapel was taken down, the chapel adjoining the choir was used as its nave, though looking north instead of east, and the two new openings made with this object. At a later period it is on record that this chapel was habitually used for secular purposes: partly as a school.

Passing on up the north choir aisle, we come to the first of the *chevet* chapels, that of St. Margaret, the entrance arch to which has the same characteristics as that into the chapels we have just been mentioning. In this case, however, the chapel is of the same date as its entrance arch, all this *chevet* work being of the fourteenth century. St. Margaret's chapel is an octagonal apse, looking northward; it has been shut off by a partly-open screen, similar to that in the eastern bay of the choir arcade, but which has been removed in the centre to admit the later tomb of Sir Guy de Brien, which stands in the centre of the arch, the remaining portion of the screen abutting against it in a clumsy manner, no attempt having been made to "make good" the junction of the two. The tomb has a recumbent effigy, with a canopy over it with miniature vaulting, which appears to have been originally painted blue and powdered. With the next arch opening from the choir aisle we come to the oblique angle of the *chevet*, and find a wide arch giving access to what may be called a double chapel, facing north-east, the centre portions of the north-east wall being returned inwards and finished with a vaulting shaft at the inner point of junction, leaving on either side an apsidal recess, which, like the main plan of the choir, is semi-hexagon instead of the more usual semi-octagon form. The whole is called St. Edmund the Martyr's Chapel, but there must evidently have been two altars or shrines here. Under the entrance arch of this chapel stands one of the most celebrated of the Tewkesbury monuments, long called that of the last abbot, Wakenham, but obviously of earlier date. This has been to a certain extent restored, but not so as in any material way to

* The plan published by the restoration committee, in which Norman work is tinted black, and later work shaded in line, is not quite correct as regards this part of the choir aisle, the south wall of which is shaded as if entirely new.

falsify its architectural effect; and certainly it is one of the finest specimens of Gothic ornamental work of this type that could be seen. It belongs to the period when the Decorated style was merging into the Perpendicular, to which latter manner some features in the tomb belong, but the style and feeling of the work retain the impress of the former period in all its magnificence. The tomb is in two stories, as one may say; in the upper portion a canopy of splendid design droops its hanging foliated arches over a ghastly recumbent figure of a half-decayed body, with worms crawling about it; the lower shelf of the monument, close to the floor, is untenanted, and is open towards the chapel, and divided from the aisle on the other side by a screen of elaborate open tracery. The suggestion has been made that the corpse-like image originally occupied this lower shelf, and that the portrait effigy of the deceased occupied the upper one: a suggestion which is in keeping with some Mediæval representations in which the fate of the body in the tomb is in the same kind of manner represented below the effigy. In the next (eastern) bay of the aisle was originally the opening to the monks' lady-chapel, now built up and filled with a modern stained-glass window of crude and strong colour by makers who have done much better things since. It is proposed, we understand, to take down this wall, and rebuild it a foot or two further east, so as to uncover and render visible towards the aisle the jamb and arch-mouldings of the original lady-chapel arch, now nearly concealed in the modern masonry. No vestige of the lady-chapel itself is left which could give an excuse for restoration. There is no doubt the building loses greatly in its effect at this portion by the loss of the lady-chapel, which was, as at Gloucester, the culminating point of the apsidal plan. Even as it is, however, the effect on coming up the aisle on either side of the choir and opening out these chapels expanding from it, with all the varied perspective made by the obliquely-grouped arches and vaulting-lines (and the vaulting is particularly fine here), is most picturesque, and, in English architecture, unusual. An interesting variety in the effect is produced by the fact that the south-east chapel, called St. Faith's, corresponding to the north-east one just mentioned, is not made with the double arrangement there described, but is an unbroken semi-octagon. The chapel on the south side, corresponding to St. Margaret's on the north, has much the same design and characteristics; under its entrance arch stands the tomb of Abbot Cheltenham, a monument of no great importance architecturally: it stands against one jamb of the arch, not centrally. In this chapel are collected at present a good many fragments found during the restoration work, including a number of small fragments of coloured statues and ornament, some of them with the colour remarkably preserved. The space between this last chapel and the Norman apsidal transept chapel is occupied by what is now the vestry, an apartment with octagon termination externally like the other chapels, but which has never been thrown open to the choir aisle further than by the small doorway (fourteenth century) by which it is now entered. On the east side of this door is a tomb of some importance, with a purbeck marble coffin on a pedestal, within an arch of Late Decorated style, enriched with the ball-flower ornament, and with a finial terminating in one of those great square spongy-looking masses of foliage which characterise some of the ornamental work of this period, and which one must like more from association with the finer points of the style than on account of its intrinsic beauty. On the west side of the door is a much simpler monumental recess of earlier date, coeval apparently with the alterations to the choir, with a triangular canopy and an arch in three large cusps over the tomb-recess. Further westward, against the same wall, is the tomb of Abbot Allan, an elaborate work of Decorated date, with a triangular canopy and a richly-moulded arch and miniature vaulting, springing from buttresses which form the termination of the design at either end. There are one or two interesting monuments at the back of the main choir arcade, facing the south-east chapel; one of these being the tomb of Abbot John, in which the coffin is placed in a recess under a low segmental circular arch, with a broad flat band of carved foliage over it, which has a very unusual effect, and looks much more like modern than ancient Mediæval work, especially in the absence of any point to the arch.

Now a word as to the actual work done in the way of restoration, and its effects, concerning which a good deal has been said in other quarters, wisely or unwisely. The work was commenced at the east end, and has not as yet proceeded further than two bays west of the crossing, where the temporary screen is now erected, shutting off the part of the church not under operation. The work done has consisted in the removal of all post-Mediæval excrescences, including whitewash; the repair of the piers, walls, and responds, where they had been cut into and damaged in erecting galleries and other additions; the repairing and restoring of the vaulting and windows, &c., in the eastern chapels; the restoration of painting and gilding on the vaults where traces of it were found sufficient to show something of the original design, and the taking up of the paving and laying over the whole area a solid stratum of concrete, upon which the pavement, which includes not a few monumental inscription stones of great interest, can be relaid in a permanent manner. The pavement had become very much dilapidated and uneven from the nature of the ground upon which it was laid. While mentioning this, it may be noticed that in the choir-aisle, adjoining the eastern bay, is the vault below the floor which holds the remains of the Duke of Clarence,—"False, fleeting, perjured Clarence,"—and the crown of which rises a little above the floor-level, and has been simply paved over as it is, with no attempt to conceal it, the flagging rising in a little hillock; we heard it was proposed to place a raised step or slab over this to conceal the irregularity. We should suggest that an incident so characteristic of the carelessness of Mediæval building should not be obliterated. To return to the main part of the work: there can be no doubt that what has been done internally gives us more idea of the original character and grandeur of the building than we ever could have had before; and to say, as some ultra-conservatives have been affirming, that the grandeur and truthfulness of the building are destroyed by such restoration is idle. Let the conservatives, who would preserve even whitewash, just look at the untouched part of the nave, and then walk round to the restored portion, and if that does not open their eyes, nothing will. On the other hand, there are matters of detail in connexion with the restoration which we feel to be at least doubtful. At the time of our visit a great part of the newly-uncovered stonework had been black-pointed in the joints, and we presume this system is to be followed out. Why this should be done we cannot imagine; the stonework looks admirable where it has just been cleaned off without pointing; and there exists no more certain method of destroying tone and aërial perspective in a large interior than pointing the joints in black. As to the advisability of restoring the coloured decoration again, we are more than doubtful. What has been done consists in gilding the bosses and corbel heads on roof and walls (the gilding being set off by a strong red ground or margin), and painting certain panels in the vaults of the same red and a bluish grey. Now, of course there may have been data for all this; but, in the first place, it is a question whether the gilt bosses in the vault, for example, were not the salient points of a complete scheme of decoration, the less pronounced portions of which are no longer traceable; and that they would have had a different effect if the whole scheme had been complete. At all events, there can be no question that the effect of these rather coarsely-gilt bosses, as it is now seen, is very disagreeable and spotty, and that unless there were a complete scheme of colour to support them, they had better have been left plain.

With these exceptions, we must bear testimony that what has been done at Tewkesbury so far is in the direction of legitimate and necessary restoration and conservation; nor can we see that at present anything is threatened which is calculated to destroy or impair the interest of the building. Not a word has been said so far in the restoring architect's reports, as to touching the exterior of the Abbey, except in so far as doing necessary repairs bearing on the stability of the structure,—underpinning walls which rest on insecure foundations, providing better drainage for carrying off rain-water, &c. If any attempt should be made to tamper with the weather-stained but perfectly-preserved and sound surfaces of the tower and the noble west front, to deprive them of their colouring by the hand of time, and reduce them to the level of a new modern Mediæval building, we do consider that a public protest should be made in such language as cannot be mistaken; but we are bound to say that no such step appears to be contemplated as yet.

Visitors to Tewkesbury Abbey should not omit, while paying attention to the numerous details of interest in the building, to notice its effect from one or two points of view at a little distance. The church stands on about the highest ground of the town; the highest as seen from the west, though at no great elevation, the land in and about the town presenting only gradual and gentle undulations of contour. The view of the abbey from the south-east, from a lane running through the meadows 200 or 300 yards from the church, is a striking one; and, looking at the building from this point, it is almost difficult to believe that we are in England, so curious and (in this country) unique, so essentially foreign, is the appearance of the apsidal east end, with its numerous clustering chapels and their rough irregular pyramids of red-tiled roofing. Another good view is from the bridge over the stream nearly due west of the church, where the combined grouping of the western turrets and central tower, rising above the farm-buildings which shut out the lower portion, is very effective. Seen as we saw it at the close of a showery day, the west front and turrets in strong light from the setting sun, relieved against an inky cloud in the rear, with a foreground of green meadows partially flooded with water that reflected the towers, it made a picture such as Girtin would have delighted in.

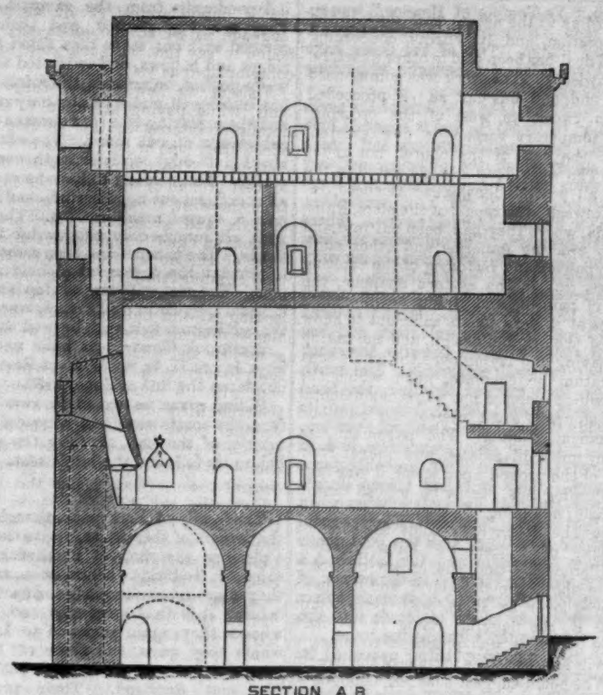
BORTHWICK TOWER.

BORTHWICK is a noble specimen of military architecture, and the finest extant example of the Peel tower so celebrated upon the Scottish border; meaning by a "Peel" a stronghold of which the tower is the only considerable work, and which stands within a walled base-court of moderate area. Here, indeed, the dimensions of the tower are those of a Norman keep, and the court, though small, is guarded by bastion towers of large diameter, but still the tower is itself the fortress, and was obviously the residence of the lord and his family, not only during a siege, but at all times. Such fortresses as Lochleven and Urquhart on Loch Ness, though far inferior to Borthwick in strength of masonry and grandeur, are nevertheless castles, whereas Borthwick is a Peel.

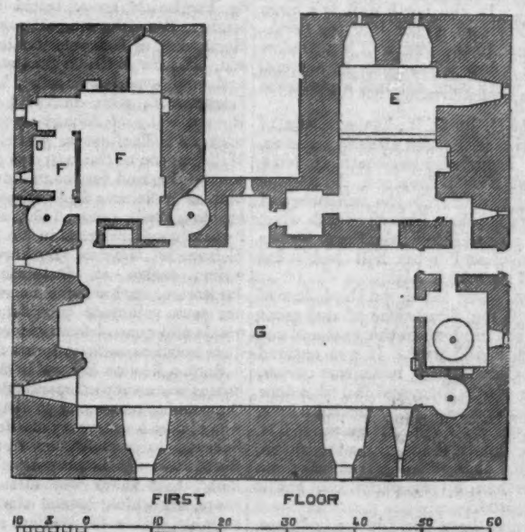
Though a ruin, and deserted probably for a couple of centuries, Borthwick is still in tolerable order, having been preserved by the unusual thickness of its walls and the excellence of their masonry, and the fact that both its basement and uppermost story are vaulted, and the upper vaults protected by stone roofing of a very substantial character. The intermediate timber floors are all gone, and the vast cavities are inhabited by a numerous colony of jackdaws, whose heaps of guano might be removed with advantage. No care has been or is bestowed upon the place, which until recently needed but little; now, however, the rank vegetation on the roof is displacing the tile stones, and the water penetrates the vaults. The grand fireplaces have fallen, and some of the lesser ones are about to fall. At present a few score pounds judiciously laid out would arrest the decay which, unchecked, will certainly in a very few years bring down the upper vaults, and involve the whole structure in irreparable ruin.

The tower stands upon a tongue of rocky land, protected by deep, rugged, and wooded ravines to the south, east, and north. Down two of these flow the heads of the Middleton burn, and, below the castle, unite, to fall into the Gore water, which, gathering its springs from the adjacent Lammermuirs, flows, parallel to the railway, down a pretty pastoral valley by Gore Bridge, to the South Esk. The tower, placed over the juncture of the three streams, is a very marked object from the railway, contesting the attention of travellers with Crichton Castle, in an opposite direction, but in sight, for a few seconds, at the same time.

The platform, covered by the base-court, is of an irregular figure, governed by the ground, rounded to the east, and presenting right angles to the north and south-west. Its dimensions are about 80 yards east and west, by 35 yards north and south. There is a large drum-tower at the south-west angle, and another, with a square rear, in the centre of the south front, and there are traces as of a third capping the south-east angle. These towers are 18 ft. diameter, have a

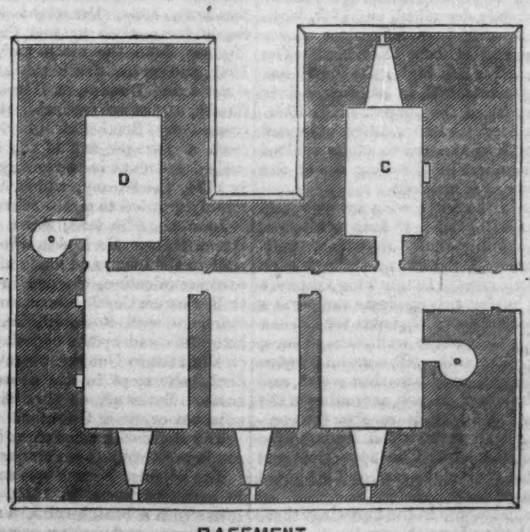


SECTION A B
LOOKING WESTWARD



FIRST FLOOR

SCALE OF 10 5 0 10 20 30 40 50 60 FEET



BASEMENT

C. Prison. D. Well-room. E. Kitchen. F. Queen Mary's Rooms. G. Hall.

BORTHWICK TOWER.

basement, a first and second floor, and are about 23 ft. high above the court, and 35 ft. to the field. In the west front, close to the angle-tower, is a gateway; an opening in a very thick low curtain, roundheaded, and probably of the date of the tower. It had a drawbridge and portcullis, and may have had a low upper story. Above the door, outside, is a flat entablature, with mouldings in the Renaissance style, and the adjacent bastion and curtain are pierced with long loops, placed horizontally, evidently intended for musquetoons, and therefore insertions. They are similar to those in the north-east bastion of Berwick town wall. The southern bastion has the original vertical loops for bows and arrows. The west is the weak side, for which nature has done nothing. The curtain accordingly is on that side thickened to 12 ft. or 15 ft., and there may have been a ditch, now filled up.

The court was divided by a cross wall, north and south, of no great strength, and the tower stood in the western half, from six to eight yards from the three outer walls. The northern curtain is an irregular heap of ruins; upon it, opposite to the tower door, there seems to have been a mass of masonry ascended probably by steps, and serving as an abutment to the stone arch by which the main or first-floor entrance was reached.

The *tower* is rectangular, 74 ft. north and south by 69 ft. east and west, and from 90 ft. to 110 ft. high, the latter height being to the ridge of the gables. In the west front is a recess, also rectangular, 14 ft. broad and 24 ft. deep, so that the building in plan resembles the Greek capital Π, and may conveniently be divided into a body and wings. The recess is not quite in the centre, the north wing being 31 ft. and the south 29 ft. broad. Also, the latter is rather the shorter, so that the north front measures 69 ft., and the south front 68 ft. The arrangement of the chamber is very simple, all being rectangular and parallel to the sides, but the mode of reaching them by staircases is very complex. The walls are of immense thickness, the north or entrance side being 14 ft., and the other from 10 ft. to 11 ft. Those of the recess, being protected, are rather less, and in parts only 6 ft. It is remarkable that these thicknesses are continued, with little or no reduction, to the top. The style is simple and severe, and although the material is cut stone, of remarkably fine workmanship both inside and outside the structure, there is scarcely any ornamentation. Over the outer door, in a shallow ogee niche, is a saint or bishop in low relief, and within is a handsome canopied niche for a statue and a sort of seat of state or sedile for the lord. The fire-places also are good, and the two larger ones of magnificent character and dimensions. These ornaments belong to the Decorated style of architecture, and correspond with the known date of the building, the first half of the fifteenth century. The walls rise from a plain plinth, and are terminated by strong corbels, 2 ft. apart, and about 2 ft. deep, between each of which was a "meurtrière," and outside it a low parapet, now removed. As usual with Scottish towers, at each angle was a three-quarter low bartizan resting on the corbels, and probably rising no higher than the parapet. Also, the three high-pitched roofs of the body and wings rise above and within the walls, being set back from 6 ft. to 8 ft. The chimneys, where they remain, are tall and handsome, and the three well-staircases opening on the roof were housed in cylindrical turrets with conical roofs, of which one remains, wanting only its finial.

The basement is on the ground level, which is about 5 ft. below the exterior ward. Above it is a first-floor, which in the body is occupied by the great hall, above which is a second-floor containing the chapel and upper hall. Above this is a third floor. The divisions of the wings are made less lofty. The north contains six floors, the south five. There are five well-staircases in different parts of the building. Two ascend from the ground level to the first floor and there stop. Two others commence at that floor and ascend to the roof, supplying the intermediate floors, and another commences half-way up the height of the hall, threads two walls as a gallery, and finally rises as a well-stair to the roof. There was thus a ready access from the first and upper floors to the battlements in case of danger.

Basement.—In the body are three chambers placed crossways, east and west, side by side, all 23 ft. long, the central 14 ft. wide, the others 15 ft. The vault springs 14 ft. from the floor, and in each, at the east end, is a large full-

arched recess, high up, narrowing to a loop. At the springing line of each vault is a row of strong corbels, evidently to support a floor, a sort of windowless entresol. These lower chambers communicate by doors, and in the south wall of the most southern is a recess or cupboard. The outer doorway, 6 ft. wide, at the level of the ground outside, is in the north wall, and is closed by a stout door, within which the passage descends eight steps. In the same wall is a well-stair, which ascends from the basement to the first floor, and there stops. In this, half-way up, is a door into the entresol over the northern chamber, from which level the stair is continued to the first floor. The entresols over the other two chambers were reached by ladders. The whole range clearly was intended for stores, in case of a siege.

From the north and south chambers doors open into the basements of the two wings, also vaulted. The north, the prison, is 18 ft. by 12 ft., with a high and narrow loop to the west. In its upper part is also a small door, from the adjacent entresol, which may have opened upon a similar floor above the prison, or may have been an opening to look down into it.

In the left wing is a vault 20 ft. long by 12 ft. 6 in. broad, and only 8 ft. high. This was reached from the adjacent chamber in the body, and contained the well. From this chamber, opening in the south wall, is a well-stair, which rises 10 ft. to an entresol, and thence proceeds to the first floor. This entresol, also vaulted, was 18 ft. by 12 ft. There is a fireplace and cupboard in the north wall, and in the south a small loop, a mural garderobe, and the door of entrance. From it a rise of 14 ft. leads to the first floor, which is thus 24 ft. above the basement.

The *first floor* contains the great *hall*,—a noble chamber, 51 ft. by 24 ft., with walls from 12 ft. to 14 ft. thick. It is covered by a pointed barrel vault, quite plain, but, with the walls, of excellent ashlar. The height to the crown is about 30 ft. It occupies the whole breadth of the building. In the north end is a mural chamber, 8 ft. 6 in. by 7 ft. 10 in., which contains the head of the well-stair from below. This has a door into the hall and another into the entrance passage. This is the passage of the main entrance, 4 ft. 7 in. broad, and 14 ft. long, having a door at each end, but no portcullis. It is the main entrance to the tower. Outside, it seems to have been approached by a stone arch of about 8 ft. span, of which the springing-course is seen under the door-sill. In the vaulted mural passage are the opposite doors, one mentioned already upon the stair-head, the other leading to the kitchen, which occupies the north wing.

At the other extremity of this northern end of the hall a door opens into a well-stair, 7 ft. 10 in. in diameter, which here commences, and supplies the upper floor and the roof. The east side of the hall is pierced by two windows, square-headed, in deep-splayed arched recesses of 7 ft. opening, and 22 ft. apart. Besides these, towards the north end is a small light, a mere loop, in a recess of 2 ft. 7 in. opening.

The great feature of the hall, after its fine pointed vault, is a grand fireplace, 9 ft. broad and 3 ft. deep, with a projecting hood of stone, which dies into the wall about two-thirds of the way up, and is supported by two double half-shafts, with bases and carved caps and a flowered band above, all in the Decorated style. This occupies the centre of the south end, and on each side of it, high up, are recesses of 5 ft. opening ending in loops of 1 ft. The hood is broken down and the fireplace in decay, but its remains are very striking. Along the west side of the hall are various openings. In the centre is a window recess, 5 ft. 10 in. broad and 9 ft. deep, from which a side opening leads into a vaulted serving-room, 5 ft. by 11 ft., which again opens into the kitchen. In the south end of this side a door opens into the withdrawing-room, and another door into a well-stair, which here commences, and communicates with the upper floors of the south wing, and the roof. Near the north end of this side a low arch or buttery-hatch opened direct into the kitchen. Besides these openings, there are two ornamental recesses. The one a niche in the north wall for a statue, about 5 ft. high, with a handsome groined and floriated canopy and a base resting upon a half-shaft, probably for a statue of the patron saint of the family. Also in the west wall, near the fireplace, is a sort of sedile, 4 ft. broad, with an ogee canopy, containing on a shield the three cinquefoils the Borthwick arms. The walls of the hall seem to have been either painted or covered with devices, one of which, "Ye Temple of Honour," was recently to be seen. Here and in the staircases are many masons' marks. Two of the doors have heads as of three sides of a hexagon, something like the Berkeley arch.

The *kitchen* occupied the first floor of the north wing. It is 16 ft. by 22 ft., and is spanned by a large flat arch, throwing the western half into a stone hood, under which the principal culinary operations were carried on. There are three recesses with loops in the north and west sides, one of which is blocked by a later oven. There is also a small fireplace. The entrances are from the main door of the hall and from the serving-room, and between is the buttery-hatch.

The *withdrawing-room* occupies the south wing, and is 19 ft. by 14 ft. It was entered from the hall and from the well-stair, and has recesses and small windows towards the south and west, besides wall cupboards. The south wall contains, in a vaulted chamber, the head of the staircase from the well-room and its entresol; and in this wall also is a mural chamber, 8 ft. by 7 ft., with two doors, a window, and, in its flat slab-covered roof, a shaft, probably for a stove chimney. This is called Queen Mary's room, and was probably her bed-chamber when she visited Borthwick. This and the larger room are plugged for panelling, and the contiguous doorways from the stairs and the hall had a wooden porch shutting them off in the corner of the room, so that there was a passage either from the Queen's room or the staircase into the hall without entering the withdrawing-room.

Above the hall, a corresponding space, 51 ft. by 24 ft. is divided by a cross-wall into an upper hall and a chapel. The *upper hall*, 27 ft. by 24 ft., has a large fireplace, with a stone hood and flanking shafts, and near it a window, both in the east wall. In the north wall is a large recess and window, and a door into the north-eastern staircase. In the west wall is a window in a recess, and a door which leads by a mural passage into the north wing, and into a garderobe in the north wall.

The *chapel*, 24 ft. by 21 ft., has a recess of 9 ft. wide, in which is the east window, a piscina, and an almbry. It had also two south windows, and between them a small fireplace. In its west wall is the entrance-door from the well-stair, and a door, 2 ft. above the floor, from the south wing, which probably opened into a raised seat for the lord. Both chapel and upper hall had a flat timber roof, and were 14 ft. high.

The room next above these, the third floor of the body, was of the dimensions of the great hall. It had three windows to the east and one to the north, south, and west. It was entered from the well-staircase in the north-east corner, and that of the south wing, and it had a door direct into the north wing. This room has a long, full-centered barrel vault, which rises about 6 ft. above the walls, and is therefore, to the crown, about 15 ft. high. It is probable that this great chamber was broken up by partitions, but it contains no fireplace.

Corresponding to these floors in the body are, in the south wing, five,—the first being the withdrawing-room already described, and 13 ft. high. The second has two windows, a fireplace, and a mural garderobe, and is about 11 ft. high. The third, the same, and is 8 ft. high; the fourth has the same arrangements, and, in addition, a door into the private seat of the chapel. It is 17 ft. high. The fifth floor has two windows only, and is about 15 ft. high to the crown of its vaulted roof. All the chambers in this wing are of the same size, and one over another.

The chambers in the north wing are over, and of the same size with, the first floor or kitchen, the hood and chimney-shaft of which, built against the west wall, passes up through each floor, tapering as it rises. In this wing there are six floors, most having two windows and some a fireplace. The second floor—that over the kitchen —is entered from the eastern well-stair, whence, at 12 ft. above the floor of the hall, a mural passage threads the north wall and its window recess, and leads into the chamber. Hence, ascending in the west wall of the hall 10 ft., it reaches the commencement of a well stair, which leads to the upper floors and the roof. The uppermost and sixth floor is in the vault of the roof, and is lighted by orifices in its gables.

Besides these chambers in the two wings there are small mural chambers at two levels in the west wall, which are reached from the south stair, and look into the recess on the west front of the tower.

The battlements are still accessible by two staircases, and the three roofs are seen to rise independently from the rampart-walk level. They are high-pitched, and their vaults are covered with cut stone tiles fitted so as to form ridges and hollows, and so jointed as completely, while perfect, to exclude the rain. This roofing has lasted well, and even now only needs relaying and the replacing of a few broken stones. The gables are of cut stone. The stair-heads are about 8 ft. high, circular, with conical roofs of ashlar. There seems to have been a low parapet all round, set out upon corbels, and between each pair a square machicolation. There is a clear walk all round, only broken by the chimney-shafts. The parapet has been removed, probably to prevent the tower being held as a military post. The east wall near the top is much injured, it is said, by Cromwell's shot, when he battered the castle from this side, beyond the ravine.

Borthwick Tower was built under a licence from James II. to Sir William Borthwick of that ilk, dated the 2nd of June, 1430.

Billing gives an excellent view of this tower from the south-west, and a good drawing of the interior of the hall, showing the great fireplace before its fall, and the lord's seat.

HISTORY.

The family of Borthwick, though for centuries the owners of this estate, derive their name from a place on the shore of Borthwickwater, in the shire of Selkirk, whence, at a remote period, they migrated to the lands and castle of Cutcane, holding it with Legertwood and Herriot Muir, whence they again removed to Lockerwart, to which they gave the name of Borthwick, an inversion common in Ireland, but rare in England and Scotland. Their predecessors at Locherwart were the Hays of Yester.

The first of the name on record was, I., *Thomas* de Borthwick, *temp.* David II., and who held lands in Berwickshire. His son, II., *Sir William* Borthwick, of Catcune, was living 1378, and his son, III., *Sir William* Borthwick, in 1387–1401, and who was father of, IV., *Sir William*, of Legertwood, who, in 1410, had a grant from Robert Duke of Albany of the lands of Borthwick and Thoftcotys, in Selkirk; V., another *William*, son of the last, was one of the hostages sent to England for the ransom of James I. To him, as Willelmus de Borthwic, miles, the king granted, 2nd June, 1430, a letter of licence, "construendi castrum in illo loco qui vulgariter dicitur le Mot de Lochorwort. . . . . ac in eodem castro et fortalicio Constabularium, Janitorem, custodesque necessarios et optimos pro sua voluntate providendi, removendi, et omnia alia quæ ad securitatem et fortificationem dicti castri necessaria fuerit faciendi."

Such a licence is rare in Scotland, where the nobles were very independent of the Crown, and the country commonly so disturbed that a castle was almost a necessary of life. To the castle so licensed to be built was given the name of Borthwick. It is probably from the term "Le Mot" that there was already a strong place there, for which indeed the position was very suitable. This Sir William seems to have been the first Lord Borthwick. His lineal male descendant, John, the eight lord, held out his castle for a time against Cromwell's artillery. His son, John, the ninth lord, died childless in 1681, and on his death the castle passed to his sister's son, Dundas, of Harrington, from which family, after two descents, the castle was purchased by Borthwick of Crosston, descended from a younger son of the first lord, and his male descendant in the tenth generation claimed, in 1774, the barony, which, however, was ultimately granted to a still nearer male heir.

John, the fifth lord, was a strong partisan of Queen Mary. He it was who ducked the apparitor in the burn, and made him eat his letter of excommunication, steeped in wine. Mary fled to Borthwick Castle, about three weeks after her marriage with Bothwell, 7th June, 1577, and, being followed by the opposing lords, fled thence on the 11th to Dunbar, disguised as a page. No doubt she slept in the chamber called by her name. Bothwell, at that time, possessed the adjacent castle of Crichton.

The Borthwick arms carved in the hall of the castle are,—(A) three cinquefoils (sable).

The adjacent church was rebuilt, or nearly so, in excellent taste, in 1850. It has a western tower with a broach spire, a nave, chancel, and round apse, and two transepts, of which that to the south is old, and mainly in the Decorated style, though with some traces of Norman work.

Dr. Robertson, the historian, was born in the manse, which, however, has been rebuilt.

G. T. C.

A FOREIGN VIEW OF THE BRITISH COAL AND IRON INDUSTRIES IN 1876.

THE *Deutsche Handelsblatt* on the state of the British iron and coal industries during 1876 will be read with interest:—"We (in Germany) are in the habit, and rightly so, of attributing the preponderance enjoyed by England in commerce and industry partly to the circumstance that she is greatly favoured by nature with respect to coal and iron. But it is just those two great supports of modern civilisation which have been more disturbed by the crisis than any other industry, and this may be easily explained. Even if over-speculation in those two industries had not been more especially active, the general stagnation of business must have re-acted more heavily upon them than upon other branches of trade. In the coal industry, before all others, wages were immoderately raised in 1872 and 1873. The owners of collieries acceded to the demands of their men only too readily. They found it profitable; they raised the price of coal, but quite out of proportion to the increase in cost of production. Those events have borne bitter fruit, not only for the owners, but also for the whole industry, especially for the iron trade; indeed, for the whole population of England. The price of coal has since fallen enormously; the wages of the colliers have also been reduced, but not at all to the same degree as the prices of coal; and to this must be added that in the former period the working hours also were shortened, and the colliers individually produce less now than a few years ago. Supported by their unions, however, the men firmly resist further reduction of wages or the re-introduction of longer hours, and we hear continually from the coal districts of wages disputes or even of strikes. Owners of collieries, however, declare that, under present circumstances, they work without any profit, in many cases even at a loss—at least of the interest on their capital. Many mines have consequently reduced work to a minimum, other owners have entirely stopped working them; and while we are writing this, we are informed that again several of the largest works in Wales and in the Durham district have announced to their men that they intend stopping work in a few days. But as long as no decisive improvement takes place in the position of the iron industry, which alone consumes about a third of the total production of coal, we need not reckon upon an improvement in the condition of affairs. The export of coal from England, however, which in 1873 had sunk to 12,619,000 tons, rose again last year to 16,266,000 tons. But this export is not at present very profitable. The average price of exported coal in the port of shipment was, at the end of 1873, 20s. 9d. per ton, at the close of 1876 only 10s. 3d., the cost of production not falling in anything like the proportion of this reduction. Amongst all the branches of industry of England, the iron trade shows the most deplorable results. All the different descriptions—pig-iron, hoop-iron, rod-iron, bar-iron, rails, boiler-plates, tin-plate, cast-iron, steel—exhibit in their export figures a considerable reduction against the preceding year, the decrease amounting on the whole to 240,000 tons. But this falling-off does not extend to last year alone; the decline has been steady since 1872, when the export of iron and manufactured iron reached its highest point with 3,383,000 tons, until last year it fell to 2,219,000 tons. The question arises now, Can there be expected, and under what conditions, an improvement of affairs? Producers of pig-iron affirm that they cannot exist at the present prices, and that they keep their works going, as far as they do, only to escape the enormous losses consequent upon the putting out of furnaces. This assertion is to some extent confirmed by the fact that the prices, or cost of production, of coals are still far higher than they were in 1869 and 1870, the prices of iron during those years being about the same as now, and that, besides, the large capital laid out in works at present partly standing idle is lying dead. Wages, however, have gone down again in the iron industry to the level before the general rise. But those wages are still higher than on the Continent; this difference, however, being more than compensated for by the geologically favourable position occupied by England. It is different, however, with iron produce and manufactured iron. Here a corresponding reduction of wages can hardly be said to have taken place. Especially in those branches in which more human labour is required, the difference between English and Continental wages becomes more important. The large modern works on the Continent are as perfect in their mechanical appliances as those in England; but they have, with equal individual power of production, somewhat cheaper labour at command, and this gives them the advantage over England. As soon as in London a large contract is brought into the market, several Continental, especially Belgian, firms appear at once as competitors, and even if they do not obtain the contract, they depress prices to such an extent as to make business unprofitable to the English producer. For some time, but especially during the last year, articles, in most cases manufactured from pig iron imported from England, such as girders, rafters, axles, &c., for which the home, even the local, industry had tendered, were imported into England at prices at which the latter could not compete. It is the same with many products of the higher branches of the iron industry. The export of all kinds of machinery, as well as that of tools, knives, blades, &c., has declined against the preceding year by 20 per cent. Those reductions may have their cause partly in a decreasing consumption; but it is becoming more difficult, especially for England, to compete in those branches with foreign countries, where they continue to develope. Carriage-springs, tools, blades, &c., are now imported into England from the Continent, especially from Belgium and France—indeed even from America. Solingen now exports scissors even to Sheffield. While export in all these branches of the British iron industry has thus so considerably fallen since 1872, the import of those products has greatly extended, that of all descriptions of steel goods having been increased threefold; and this rapid increase is beginning to attract attention, even to cause a kind of alarm, in England herself."

THE CONNEXION OF GREEK AND ROMAN ART WITH THE TEACHING OF THE CLASSICS.

MR. SIDNEY COLVIN, Slade Professor of Fine Art at Cambridge, delivered the first of a series of five Cantor lectures on this subject, under the auspices of the Society of Arts, on Monday afternoon last, Lord Alfred Churchill in the chair. The large hall was about half-filled.

Professor Colvin commenced by remarking that ever since modern Europe, at the close of the Middle Ages, commenced to turn its attention to the antiquities of Greece and Rome, two kinds of antiquities had been sought after and studied, viz., the remains of literature in books, and the remains of art and handicraft in architecture, sculpture, pottery, &c. But, although a Classical education might be defined as the training of the mind by a systematic study of the genius of ancient Greece and Rome, that study had been, and was being, pursued almost entirely with reference to the literary remains alone. Since the early days of the revival of Classic learning, our materials of all kinds had greatly increased, both with regard to remnants of ancient literature and relics of ancient art. The stores of literary and monumental remains which we now possessed would have overwhelmed the imagination of the early labourers in the field of Classic antiquities, enthusiastic as they were. Their enthusiasm gradually resolved itself into a settled, sober study of, and regard for, Classic antiquity, and all civilised nations had agreed that this study of Greek and Roman antiquities should form part of the education of their sons. However great might be the progress of science, and however important might be the increase in our knowledge of the natural world, the study of the antiquities of Greece and Rome would probably continue to the end of all things to be one part of the education of civilised men. A Classical education, properly speaking, was one which, firstly, sought to get as much knowledge, and that knowledge as thorough and profound as possible, of the works and life of those two great nations of antiquity, the Greeks and Romans; and, secondly, one which in the course of the acquisition of that knowledge would impart to the mind as complete a training as possible. The one sovereign characteristic of the Greek genius was anthropomorphism; this was the key to the whole of the achievements of that great people. Not only were they endowed with great physical beauty and perfection in their persons, but they lived under extraordinarily favourable conditions of climate, and the outcome of these conditions was that when they began to put their hands to tools and to paint and carve, in the course of a few generations they filled all their temples and towns with images the most beautiful the world had ever seen. Although an immense number of these works of art and handicraft had perished, they had not all disappeared, any more than had the whole of their literary remains, although it was unfortunately true that all the most famous works of art known to the ancients were either destroyed or lost. Nevertheless, we possessed a mass of material in the form of Greek art-treasures which could be made of the utmost service for purposes of study in connexion with the inculcation of general Classical learning. It should be borne in mind, too, that while the literary remains of ancient Greece and Rome were not at all likely to be materially increased,—or, at any rate, the possibility of their increase was very remote,—it was, on the other hand, quite certain that our store of Classic antiquities in the shape of sculpture, architecture, pottery, and specimens of handicraft generally, would be largely augmented,—to an extent, indeed, to which there was hardly any limit whatever. Perhaps some of his (the lecturer's) audience had read in the *Times* of that morning the interesting account which was given of one year's discoveries in that great centre of ancient art, Olympia. These and kindred discoveries gave us every reason to hope that we were now only at the dawn of an era of such discoveries, and encouraged us to believe that our stores of antiquities would be enriched to an indefinite extent. Now art was a language,—and a language, moreover, which did not change or become corrupt or forgotten, as did the languages of speech or literature. Was it not, then, of the highest importance that in imparting to our youth a knowledge of classic life and literature, we should also impart to them a knowledge of Classic art? This was a species of knowledge which, once properly imparted, would never be forgotten, and taken in conjunction with the study of Classic literature, would explain and illustrate the meaning of passages and make the study much more interesting. If a knowlege of Classic art and antiquities formed part of a generally-recognised curriculum, our museums would not have the aspect of so many collections of mere dry bones which they presented even to those who had had some Classical training. What did the average Classical scholar really know of Classical art and antiquities further than he was able to glean from perfunctorily turning to a dictionary to see how the toga was worn or what was the arrangement of a Greek theatre? Any systematic study of Classical art was almost totally unknown in England; in fact, it had only recently commenced to be known at all. It was almost completely neglected in our great centres of education, the universities; not that we had not in England great archæologists able to vie successfully with those of other European nations, but simply because they received no encouragement to popularise their special branch of learning, but had to pursue it almost alone or in connexion with positions they might hold at the British Museum or elsewhere. In short, it formed no part of the general *culte* of educated Englishmen. Here, Classical literature and language were studied to the neglect of Classical art and archæology; but it was not so in Germany, where there had been a great revival of Classical knowledge and studies during the last century, this revival being largely characterised by the renewed interest devoted to monuments and works of art. For a long while England was at the head of Classical scholarship, but since the time of Winckelmann her supremacy in this respect had been on the wane. In every university of importance in Germany there was a more or less complete museum of casts from works of Classic art, and the antiquities of Greece and Rome were studied, as they should be in this country, *pari passu* with Classic literature. The casts were used to illustrate the remarks of lecturers and professors, who were careful to make clear in what excellence in art consisted. These studies were having the result of placing the Germans in the forefront of archæological research, and we in England, who at one time took the lead, were often compelled to go and sit at their feet. For a long time they had excelled as interpreters of Classic antiquities, England being content with her until lately unrivalled *rôle* of explorer and discoverer (and amongst societies which had done much in this direction was the Dilettanti Society); but now the Germans were actually wresting from us the laurels which we had won in the exploration and discovery of ancient monuments. Incomparably the most important discoveries

which had been made of late were those at Olympia by German explorers, although they had not caused the sensation which has followed the excavations at Troy and Mycenæ,—these again being German discoveries. The remarkable discoveries in Cyprus, again, were the work of an Italian, acting as American vice-consul there. So that not only the scholarship of archæology, but the enterprise of archæology was passing away from us into foreign hands. The lecturer next explained, by means of an illustration on the wall, how the Greeks translated an epic poem into sculpture, choosing as his example the continuous sculptured frieze of the Choragic monument of Lysicrates, which represents the incidents connected with the attempt of the Tyrrhenian pirates to carry off Bacchus to Italy. The poem, which was read by Mr. Colvin, narrated how the sailors bound the god, how he broke the withs or chains with which he was bound, and changed himself into a lion, a well of wine at the same time bubbling up in the midst of the ship, and vines and ivy springing up and entwining with the ship's tackle; and how the terrified sailors jumped into the sea and were transformed into dolphins. All this, said Mr. Colvin, was faithfully depicted in the sculptured frieze referred to, and the way in which the subject was made to lend itself to the conditions and limitations of sculptural art was in the highest degree interesting and instructive. This, too, was only on a small scale, for the Choragic monuments were very small, and were merely used for the purpose of depositing the tripods which were accorded to the owner or trainer of the chorus which had been the most successful in musical or dramatic competitions, there having been a whole street of these monuments at Athens. In conclusion, Mr. Colvin said that in the study of Greek art for its own sake the student must necessarily acquire a knowledge of art generally and of its materials and capabilities. He must learn what could be done in sculpture and what in bronze, and what were the particular virtues and characteristics of other materials, such, for instance, as terra-cotta. Then, again, art had its historical phase, in common with literature. Of course the study of Classical art could not be studied apart from Classical literature, especially the writings of some authors who wrote what we should call guide-books. Amongst them might be named Pausanias, whose *forte* was geography and topography; Pliny, the encyclopædist of natural history and the arts; and Lucian, the novelist and writer of romantic criticisms.

The second lecture will be given on Monday afternoon next.

GLASS PAINTING.

AT a meeting of the Architectural Section of the Glasgow Philosophical Society, held on the 28th ult., within the Corporation Galleries in that city, a paper was read upon the subject of "Glass Painting," by Mr. Stephen Adam. The chair was occupied by Mr. David Thomson, and there was a full attendance of members.

Mr. Adam commenced with a description of the labour involved in the production of a stained-glass window, which he said might be treated in three distinct manners, viz., the mosaic, the mosaic enamel, and the enamel. After details respecting these three methods of treatment he proceeded to trace the early history and modern development of the art, pointing out wherein modern artists had succeeded in catching the spirit of the old, wherein they had failed to do so, and by what means the art might be revived to its former position by avoiding the causes of decay. He showed that stained glass was probably known to the Egyptians, but there was no trace of its existence among the Greeks, and unless Dr. Schliemann should enlighten us on the matter we were likely to remain ignorant concerning it. He ventured the opinion that a nation so thoroughly imbued with a perception of the beautiful as were the Greeks, would not, could not, be blind to the use of glass as an exponent of nature and art. After noticing the existence of stained glass at a very early period of the Christian Church, Mr. Adam referred to the Early English style, with its three classes of windows, the medallion, the figure and canopy, and the Jesse. With respect to the decay of the art, the generally accepted theory was that this was attributable to the influence of the Reformation. With this he disagreed, though he believed the Reformation, and its consequent troubles, may have discouraged the practice of glass-staining. He believed the germs of its decadence were to be found in the introduction of a false style,—false in principle, and false and inconsistent in execution. He expressed his concurrence with the opinion that the golden age of glass-painting was the twelfth and thirteenth centuries; and, in concluding, stated that the causes which had led to the decay of the art were fully appreciated of late, and we were now in the dawn, or rather, in the midst of a revival. It were vain, however, to hope that we could ever attain to the simplicity and purity of early art, for even our imitations of it were to a large extent sophisticated. But he hailed the tokens already given of a new birth to the art as an indication of higher things, and accordingly looked hopefully to the future. With regard to the German glass, which had been so extensively introduced, he stated that this importation was not resorted to until native artists had put themselves out of court by varied and ever-increasing monstrosities. He was confident if they returned to the old ways of producing really artistic work, that there was sufficient patriotism among British connoisseurs to banish for ever the barbarous abortions. Were it possible, he believed it would be beneficial to establish an artistic tribunal for the purpose of testing all work professing to be high art, such tribunal to be armed with plenary power to accomplish the demolition of the many existing outrages on taste.

A vote of thanks to Mr. Adam for his interesting paper brought the proceedings to a close.

THE NEW BARRACKS NEAR GLASGOW.

THE operations in connexion with the large military establishment at Maryhill are being rapidly pushed forward, and it is hoped that by the close of the current year but little will be wanting to complete the work. By the erection of the new barracks on a pleasant site on the eastern bank of the Kelvin, and about two miles and a half to the north of Glasgow, the intention of the War Office is to supersede the old military depôt in Gallowgate, a crowded and somewhat unhealthy district of the city,—at least, before the Improvement Trustees entered so vigorously upon the important scheme they have in hand. Originally the buildings at Maryhill were in the hands of a contractor who broke the ground some six years ago, but some misunderstanding arising, the War Department determined on assuming more direct control of the works. These, we learn, have since been carried on by a system of civil and military labour combined, and which has been attended with the most gratifying results. The buildings in course of erection cover an area of about 30 acres, allowing an additional 30 acres for the purpose of a drill and exercise ground. Fortunately the authorities were able to find upon their own ground a supply of stone excellently adapted for building purposes, and this, it is computed, has enabled them to effect a saving of several thousands of pounds. Accommodation will ultimately be provided within the boundary for a battalion of infantry 800 strong, stables for a squadron of cavalry, and quarters for a battery of field artillery. We have already described in these columns the plans of the various buildings in detail, but it may not be out of place to recall the leading features. From the extensive site it will be readily seen that the separate buildings are varied in character, and in every way adequate to the requirements of a large military establishment. Among the more prominent may be mentioned a chapel and school in the Gothic style of architecture, a spacious hospital which is all but finished, baths, wash-houses, canteen, game-rooms, and a gymnasium to be fitted up in the most approved style. The authorities have thus shown every desire to study not only the health and convenience of the men in providing them with suitable and commodious quarters, but have had due regard to the requirements of their higher nature in affording them the means of instruction and recreation. The main entrance to the infantry section of the barracks is by a massive ornamental gateway on the Maryhill-road, while the artillery and cavalry entrance will be by the Balgray-road. The burgh of Maryhill is a thriving one, and there are many collieries and public works close at hand. The surrounding district, however, is rich in scenes of natural beauty, and when viewed from the aristocratic terraces in Great Western-road the architectural features of the new barracks serve greatly to enhance the general effect of the landscape.

THE GROCERS' COMPANY'S MIDDLE-CLASS DAY SCHOOL.

THIS school, which forms the subject of one of our illustrations, has lately been erected on a fine open site facing the Hackney downs, from the designs of Mr. Theophilus Allen, architect, of John-street, Adelphi. It consists of three stories, and is planned on the Prussian system for the accommodation of from 500 to 600 boys. It contains fifteen class-rooms, nearly all of which have the advantage of a north light. On the upper floor are eight class-rooms and a library; on the principal floor, of which a plan is given, is the entrance-hall, placed in the centre of the building, from which a double staircase leads to both upper and lower floors. On the right of the entrance are hat and coat rooms, and lavatories, and on the left sergeant's room and secretary's office, &c. Five of the principal classrooms are also placed on this floor. The head-master's room, &c. forms a mezzanine story. On the lower floor, which is slightly raised above the playground level, the dining-hall for 200 boys is placed, with the kitchens, sculleries, larders, tradesmen's entrance, &c., adjoining thereto (which do not communicate with any other part of the building), and also undermasters' rooms and two class-rooms. In a sub-basement the heating apparatus is formed, which supplies warmed fresh air to all parts of the building.

One of the chief features of this design is a large semicircular lecture-theatre, placed at the rear, and entered from the principal floor, being nearly of the full height of the main building, and capable of seating upwards of 800 persons. The cloisters under the theatre form a covered playground. The building has been erected at a cost of 15,000*l.*, Messrs. Holland & Hannen being the builders.

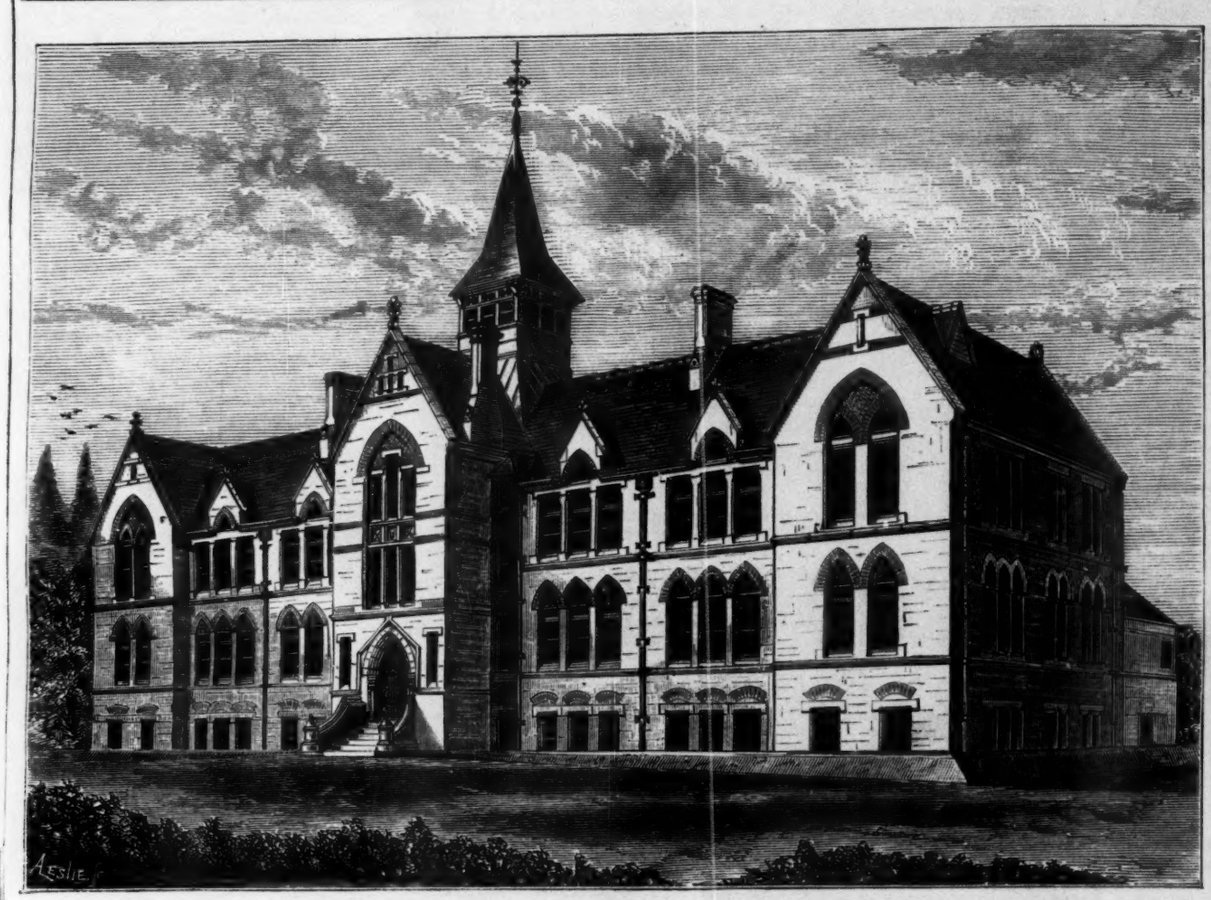
A NEW DOCK AT DEPTFORD.

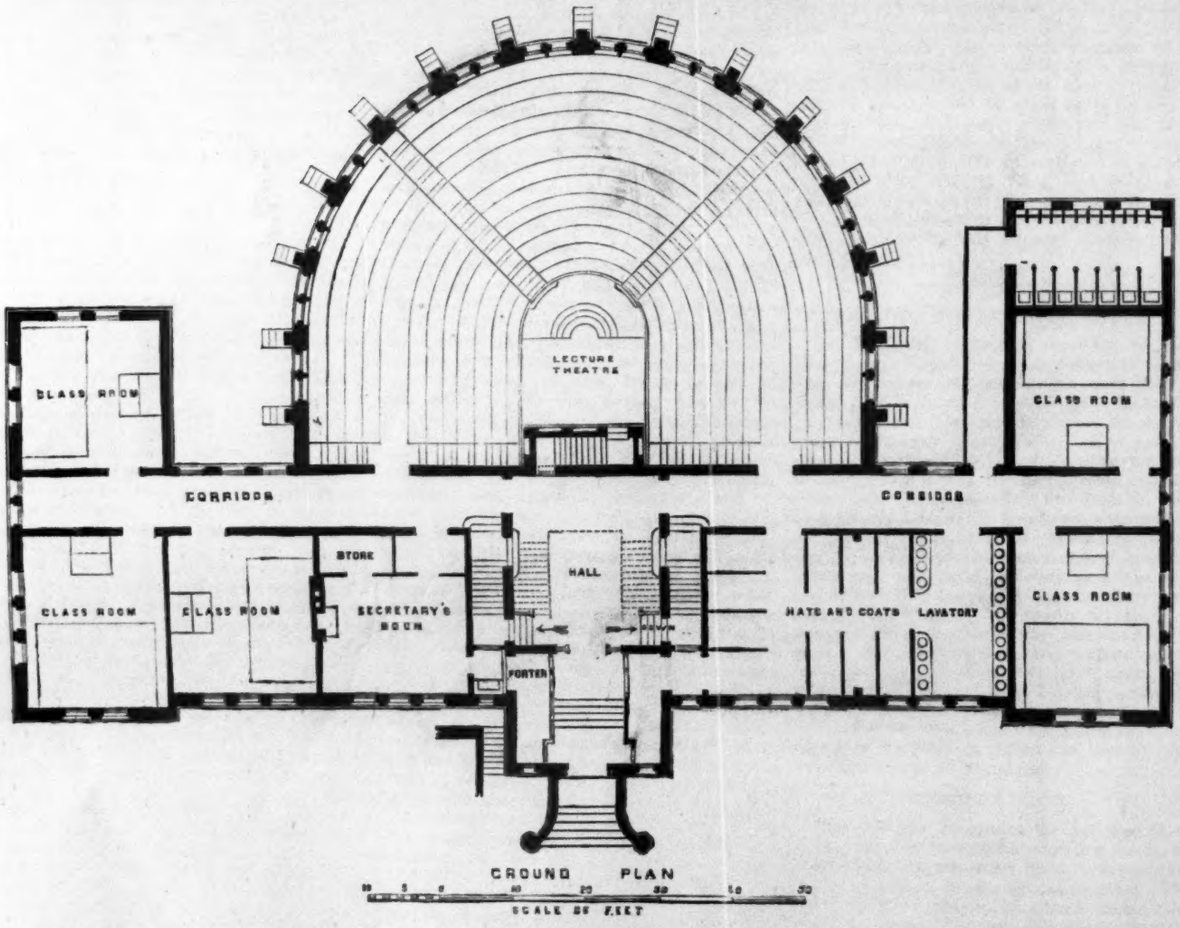
IN addition to the numerous graving-docks situated in the locality of Deptford, an extensive one is about to be constructed for Messrs. Wm. Walker & Co., at their Deptford Green Yard, being the second large dock recently built for this firm, from the designs of Mr. E. C. Homer, C.E., the former one being 420 ft. long, 110 ft. in extreme width, and a brick entrance 63 ft. wide. The present dock will be 320 ft. in length, with an additional space at the head for lengthening it another 300 ft. (ultimately to be extended), 92 ft. in extreme width, and will have a 50 ft. caisson entrance, with a draught of water on the sill of 19 ft. When completed it will be fitted up with large pumping machinery, dolphins, and the most modern appliances for facilitating the docking and undocking of vessels, and capable of holding ships of between 3,000 and 4,000 tons burden.

LIVERPOOL ENGINEERING SOCIETY.

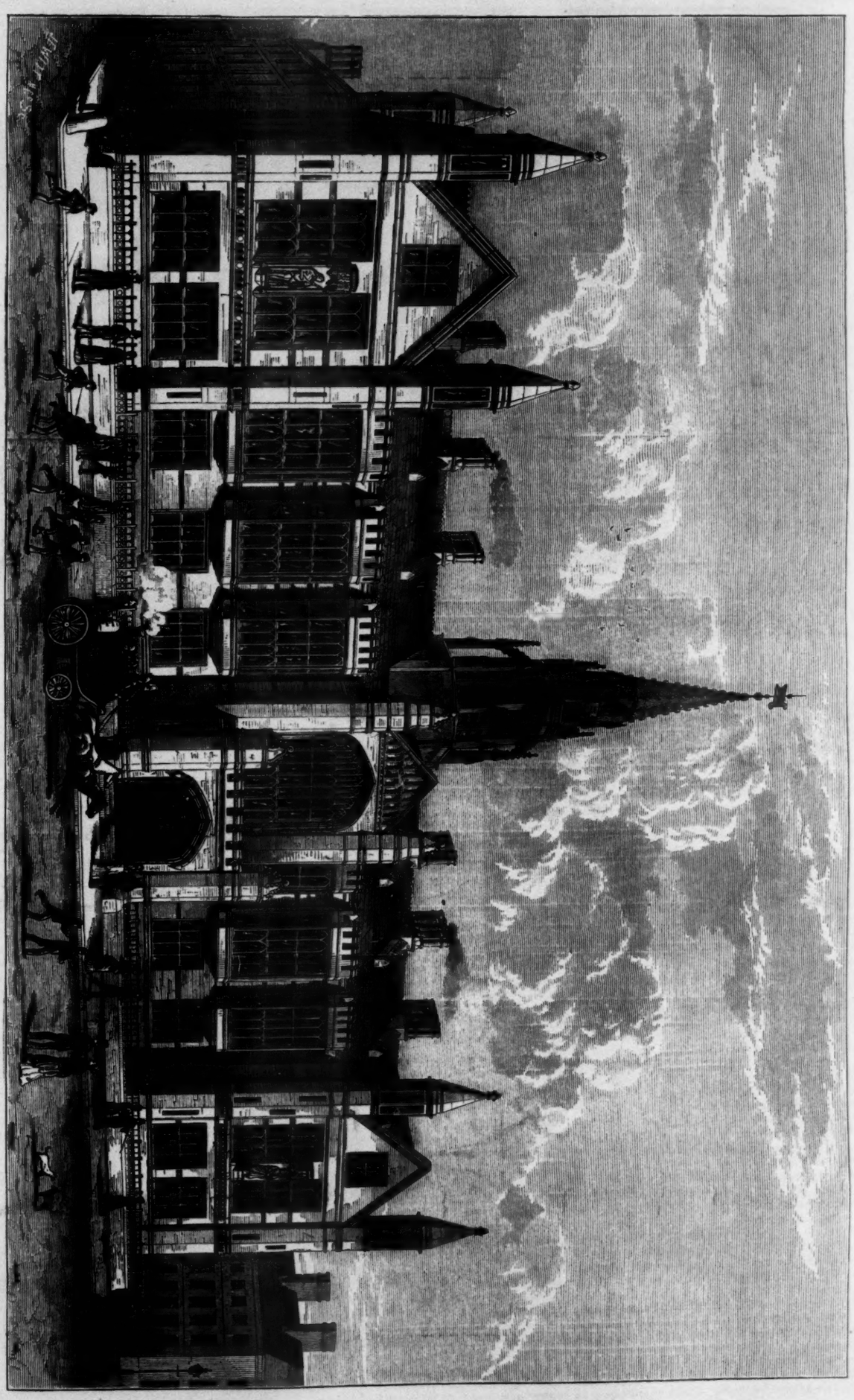
AT the usual fortnightly meeting of this Society on Wednesday, Mr. Alexander Ross, district engineer of the London and North-Western Railway, read a paper on "Hydraulic Machinery, with Special Reference to its Application to Railway Goods Yards." The author, after enumerating the properties of water and the laws which govern its action, described the hydrostatic press patented by Bramah. He next described Sir W. G. Armstrong's method of transmitting power by water-pressure by means of a dead-weight accumulator, and explained the object and working of the various details connected with it, pointing out that the water was not a motive agent, but merely a carrier of power, much in the same way that shafting is used. For station-yards and places where machines are scattered over large areas and intermittent in their action, Mr. Ross strongly advocated the use of hydraulic machinery in preference to long lines of shafting or other means of transmitting power, as thereby the wear and tear is much reduced.

Titian.—The monument to be erected to Titian, on the tercentenary of his death, at Pieve di Cadore, his native place, will consist of a statue raised on an ornamental pedestal. The figure has been designed by Signor Antonio dal Zotto, a Venetian sculptor. It is somewhat over life size. The pedestal, which will be 12 ft. in height and of white marble, is from the designs of Ghedina, the painter. The statue will be cut by the brothers De Poli, of Vittorio.

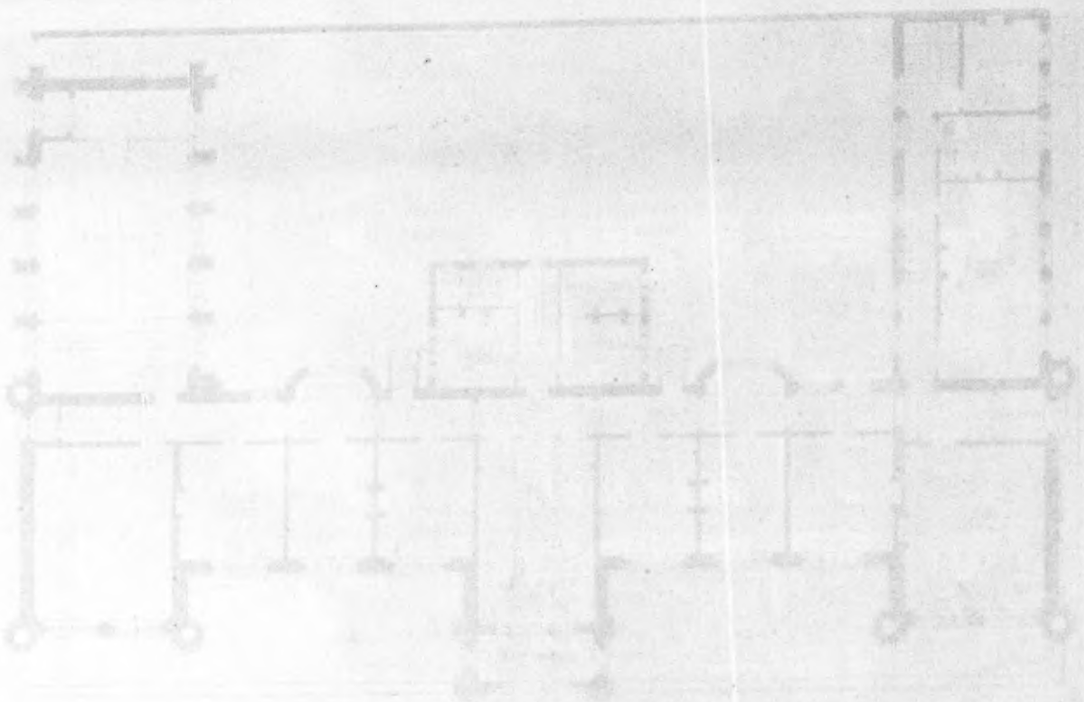


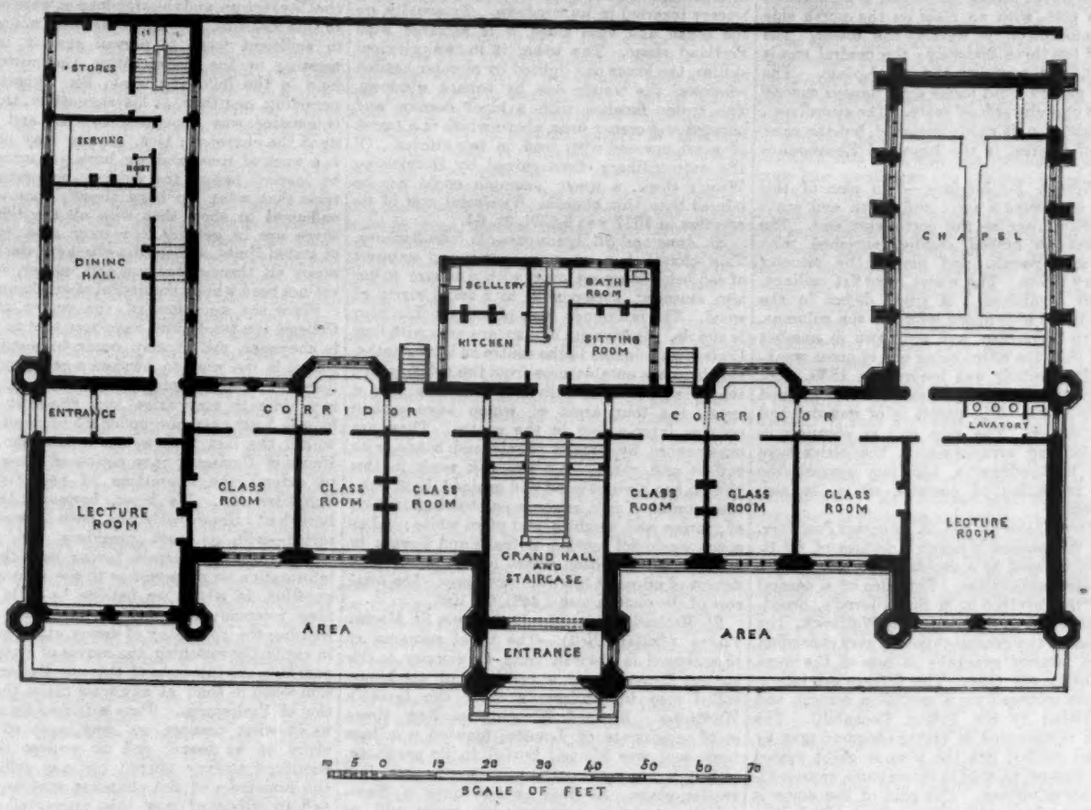


THE GROCERS' COMPANY'S MIDDLE-CLASS DAY-SCHOOL, HACKNEY DOWNS.—MR. THEOPHILUS ALLEN, ARCHITECT.



ACCEPTED DESIGN FOR TRINITY COLLEGE, LONDON.—Mr. Alfred Langston, Architect.





ACCEPTED DESIGN FOR TRINITY COLLEGE, LONDON.—*Plan.*

TRINITY COLLEGE, LONDON.

THE accompanying illustration gives the front view in perspective of the proposed building for Trinity College, London. We publish also a plan. This institution was founded in 1872, and received incorporation by a special charter in 1875, for the purpose of promoting the advancement of musical and general education, musical science being the principal feature of the college curriculum and examinations. The council or corporation consists of twenty members, for the most part graduates in arts or music. Mr. H. G. Bonavia Hunt, M.B., F.G.S., is the warden, and Dr. John W. Hinton, M.A., is the present honorary secretary. The most popular work of the college has been the establishment of local examinations in elementary musical knowledge, in respect of which 100 local centres have been appointed, and upwards of 5,000 students have been enrolled. The accepted design is by Mr. Alfred Langston, 16, Tavistock-street, Bedford-square. The building when complete is to consist of a number of small class-rooms on the ground-floor, a large public hall, containing platform and organ, a library, a dining-hall, a college chapel, and rooms for official residence; the external architecture being Domestic Gothic throughout. We believe that negotiations are in progress for the purchase of a site near the Thames Embankment.

NOTES ON SOME CONDEMNED CITY CHURCHES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT the ordinary general meeting of this Institute on the 9th inst., Mr. Charles Barry, president, in the chair, two papers were read respecting some of the condemned churches of the City of London. The first of these papers was read by Mr. R. Phené Spiers, and was in the form of a report prepared under the direction of and signed by the members of the sub-committee referred to. The following is its substance:—

In accordance with the request of the Committee for the Conservation of Ancient Monuments, that a detailed account of the condemned City churches should be preserved amongst the archives of the Institute, a sub-committee was formed consisting of Mr. Toulon, Mr. E. Ferrey, Mr. G. H. Birch, and Mr. R. Phené Spiers, who have for some time past been engaged in personally visiting the churches and carefully noting their appearance, present state, fittings, antiquities, and monuments. Broadly speaking, the very existence of most of these churches is threatened. A few sops to Cerberus, in the shape of some twenty of them, distinguished by their antiquarian or other interest, are to be retained; and all the others that have outlived the fire, and against whose walls the surging tide of the restless traffic of ages has beaten, are at last to succumb to be swept away, and their very sites and names forgotten. The necessity for the existence of the sub-committee on this subject is apparent from the fact that since they commenced their labours two of these churches have been destroyed, two more marked for destruction are awaiting the signal for the axes and hammers to commence the work of havoc; and another is being shorn and lopped of its bulk to suit the modified views of the nineteenth century. Passing by the historical question of when and by whom London was first divided into parishes, we make our starting-point the Great Fire, which had just swept over the devoted city, and of the 107 parish churches existing within and just without the walls, 22 only remained after the fire, and of these 22, nine have since been rebuilt, so that 85 were actually consumed in the flames. Of these 85, 35 were never rebuilt; but the parishes were amalgamated with the adjoining ones, so that one church served two parishes. The rebuilding of most of these churches took place within the next fifteen or twenty years subsequently to the fire, so that, roughly speaking, at the commencement of the present century we possessed 107 churches in London, that is in the City. In little more than three-quarters of a century this number has been reduced to ninety-five, twelve of them having been utterly destroyed, whilst two more are awaiting their fate. Only thirty-one, in addition to those already doomed and destroyed, are at present thought worthy of the same fate, and of this number some few are threatened with immediate destruction. With these few the sub-committee have now more especially to deal, and to draw attention, in accordance with their instructions, to their chief points of interest. These are the churches of St. Dionis Backchurch; All Hallows, Bread-street; St. Margaret Pattens; St. George, Botolph-lane; St. Mary Abchurch; St. Edmund the King; St. Mary Aldermary; St. Anne and St. Agnes, Aldersgate; St. Michael, Paternoster Royal, College-hill; St. Stephen, Coleman-street; and St. Benet, Paul's Wharf.

St. Dionis Backchurch consists on plan of an irregular square, divided into nave and aisles by four Ionic columns on each side. The nave is covered with a barrel-vault of elliptic form, being penetrated by four smaller elliptic vaults on each side, with circular clearstory windows. The aisles are covered by flat ceilings, divided by architraves, which are carried by columns at the wall sides; there are no responds on north and south sides. The exterior of the church, with the exception of the tower and east front, which are in stone, is built of rubble masonry covered with stucco. Some years ago Mr. G. E. Street made a design for entirely Gothicising the church, including the tower, but the scheme was abandoned. This church will very shortly be destroyed. The total cost of its erection was 5,735*l.* 10*s.* 8*d.*

All Hallows', Bread-street, cum St. John the Evangelist, Watling-street.—The plan of this church is a long parallelogram, without aisles. The front towards Bread-street is occupied at the south-west angle by the tower. The interior is not striking, the fittings only giving interest to it. The ceiling is flat, coved at the sides, the cove being groined to the windows in six compartments on each side. The reredos is of oak, and very lofty; the Corinthian columns on either side have been painted in imitation of marble. The carved wreaths of fruit and flowers are undoubtedly by Grinling Gibbons. A "deconsecration" service, whatever that may be, was recently held in the church, which has since been closed, and is now only awaiting the order for the work of demolition to commence. The sub-committee enter their earnest protest against the demolition of one of the most curious and interesting of Wren's towers, which, apart from the associations connected with Milton and Sir Isaac Newton, deserves to be preserved for its own artistic merit. The total cost of erecting this church was 3,348*l.* 7*s.* 2*d.*

St. Margaret Pattens, Rood-lane, is a parallelogram on plan, with an aisle on the north side and terminated on the west by the tower. The east end has three divisions; the central one is recessed, and contains the altar-piece. The western gallery-front forms a continuous canopy over the churchwardens' seats. The sword-rest, of wrought-iron, is richly designed, but the chief object of interest is the beautiful Renaissance lectern.

St. George, Botolph-lane.—The plan of this church comprises a nave and north and south aisles, with tower at the north-west end. The nave has an arched ceiling, enriched with coffers and panels, and pierced by circular clearstory lights. The aisles have flat ceilings, with flat architraves. A great defect in the interior is the wide space between the columns, which are Corinthian, and only two in number on each side, the effect being one of great weakness. The seating was lowered in 1838, and, although of oak, has been painted and grained a lighter colour. The pulpit is of unusual and elegant design. The east end is pleasing in proportion and arrangement. The aisles have sloping half-pediments, abutting against the centre projection of chancel, which is also pedimented.

St. Mary Abchurch-cum-St. Laurence Pountney. In plan this church is nearly a square of 60 ft. by 65 ft., covered by a cupola supported on eight arches and pendentives. This idea of a central dome Wren reverted to in St. Mildred's, Bread-street, and also in St. Stephen's, Walbrook. The treatment of the central cupola is very charming, and the interior generally is one of the most beautiful in the City. The fittings are intact. The dome springs from a modillion cornice, and was painted by Sir James Thornhill. The subject represented is rather obscured now by dirt and smoke, but the idea is eight seated female figures, painted in *chiaroscuro*, representing saints or virtues. This part of the dome is pierced by four oval lights, above which is a painted cornice, and the remainder of the surface of the dome is painted in colours, with a representation of the cherubic choir playing on divers instruments of music. The oak altar-piece is remarkably rich, and is unquestionably from the hands of Grinling Gibbons. The woodwork generally throughout this church is thoroughly typical of the solid, dignified, and handsome work to be found in most of the City churches. Externally the church is not strikingly handsome, and any one ignorant of its internal beauties would be disposed to depreciate the idea of its being preserved. It was covered with stucco, but of late years this has been removed, revealing its red brick walls and stone dressings. The tower has circular-headed windows in the belfry-stage, with a cornice from which rises a square cupola surmounted by an open lantern and spire. The churchyard has been levelled, and made into a sort of courtyard on the south side, open to Abchurch-lane. The church was completed in 1686, and cost 4,922*l.* 2*s.* 4½*d.*

St. Edmund the King-cum-St. Nicholas Acons. This church is on the north side of Lombard-street, and its site is naturally one of those "intensely-compressed valuable ones," very much coveted. It stands north and south,—a very unusual deviation,—and in plan is a long parallelogram, with an altar recess at the north end, and a tower breaking into the area at the south. It is principally lighted from the north and south ends, the side windows having been blocked by the erection of the neighbouring banks. The ceiling is flat, and coved at the sides. There is a western gallery on each side of the tower, and the organ stands in front of the tower. From its position the church has but one front, which faces Lombard-street. It is set back about 5 ft. and the tower and spire project about 18 in. beyond this. The front is in stone, and in good condition. The church was rebuilt in 1690, at an expense of 5,207*l.* 11*s.*

St. Mary Aldermary.—In plan this church has nave and side-aisles, with a western tower, partly in the church. The interior has four columns of the Corinthian order on each side, and two attached columns at each end. These columns were set on plinths the same height as the old pewing. An architrave and cornice rest on them. The central part of the ceiling is arched; over the aisles the ceiling is flat; at the east and west ends of the arched part it is enriched with coffers and roses; in the centre it is pierced by semicircular windows, one on each side, making a complete groin. There is a western gallery, containing the organ. The church has lost nearly all its original internal fittings, and has endured the indignity of having tracery inserted in its windows. Externally, on the south and east sides, it is ashlared with Portland stone. The tower is in two principal stories, the lower one lighted by circular-headed windows, the upper one by square windows. The tower finishes with a block cornice and parapet and corner urns, above which is a turret of wood, covered with lead, in two stories. Of the extraordinary effect gained by Gothicising Wren's work, a worse example could not be offered than this church. The total cost of its erection in 1677 was 5,237*l.* 3*s.* 6*d.*

St. Anne and St. Agnes-cum-St. John Zachary. This church has an unprepossessing exterior of red brick stuccoed over, with a square tower also stuccoed, surmounted by a small turret of wood. The interior is very pleasing. The plan is simple. It consists of a square area with four Corinthian columns in the centre on lofty plinths. On these are entablatures from the sides, where they rest on corbels, dividing the area into a cross, the four arms of which have arched ceilings intersecting in the centre. These are ornamented by square panels and bands, with coffers and roses. All the oak work in this church has been painted and grained light oak; the reredos, of oak, has been painted in imitation of granite and marbles and plain white; it has some wonderful carving of fruits and flowers in festoons, but has been ruined by the paint. The demon of oil-paint has run riot here. The total cost of the church was 2,448*l.* 0*s.* 10*d.*

St. Michael, Paternoster Royal, cum St. Martin Vintry (College Hill).—The royal surname of this church is derived from its vicinity to the ancient Tower Royal, a residence of our kings, called also in Froissart's time the Queen's Wardrobe. Richard Whittington, four times chief magistrate of London, founded a college here, and was himself buried in its precincts, although no monument now marks his last resting-place. As long as the nave of Westminster remains, however, his name will be perpetuated. The plan of St. Michael's, like that of All Hallows, is a parallelogram, with tower included at the south-west angle. This is of very elegant design, with an octagonal stone lantern of three stages, somewhat similar to St. James's, Garlickhithe, and also to St. Stephen's, Walbrook, but is the best of the three. Internally it is free of columns, and has a flat ceiling coved at the sides. There was a western gallery, but this has been removed. On the whole, the interior of this church has not suffered materially from the alterations; the decoration of the walls being quiet and subdued. The total expense of this church, finished with the exception of the tower (which was not completed untill 1713) was 7,455*l.* 7*s.* 9*d.*

As to *St. Benet's, Paul's Wharf*, the committee understand that the building will not be destroyed, but handed over to a Dutch congregation. Of *St. Stephen's, Coleman-street* [St. Catherine Coleman, Fenchurch-street ?], the communication of its probable removal came too late to be included in these notes.

Of the general question involved in the removal of these City churches Mr. Teulon treated in a paper, of which the following is the substance:—

The condemned City churches has been selected as the subject of this deliberation to allure you into thoughtful, though mournful, reflections on those dear old friends that are gradually but surely disappearing from amongst us, and in the hope of eliciting all the information that can be collected in reference to their respective features and history before they are lost to us, and even their former existence forgotten. While, however, we lament over what is taken away, and cherish a fond remembrance of every trifle connected with them, it would appear to be our next duty and labour of love to think for those which remain, that we may put forth our humble, yet earnest, endeavours to save them.

In the early part of last year certain resolutions were passed, and a report was issued, by the Fellows of Sion College, containing the appalling intelligence that they intended to apply for powers to take down thirty-one of the City churches. This stupendous proposal was consequently brought under the notice of the Council of this Institute, who one and all gave their most earnest attention to the information laid before them, the President, Sir Gilbert Scott, taking special interest in it. It may be quite worth while, in passing, to remark, that immediately after this report appeared several letters were published in the *Times* with the view of showing that the majority, if not all, the City rectors, and the archdeacon, were opposed to this measure, but that they were not present in sufficient force to prevail against it.* A meeting of the Conservation Committee was held in the following week, Sir Gilbert Scott presiding, and then, at his suggestion, this sub-committee was appointed to visit and report upon the churches; this, as you may suppose, is a work of time, and we have yet many more to inspect before the work is completed, but trust that what we have already done may be sufficient to show that with all the difficulties there are in getting four busy men together at stated times, and the drawbacks of dark afternoons all through autumn and winter, we have yet not been wholly unmindful of our commission.

Since the adoption of the report at Sion College, the resolutions have been said to be held in abeyance, and it may occur to some minds that it is not wise to awaken a power which is dormant; but sleeping means waking, and at any time it may arise and re-assert itself; indeed, I am even now under the impression that within the last few weeks a member of the House of Commons gave notice of some motion to extend the operations of the Union of Benefices Act. We trust, however, that Mr. Beresford Hope—who has been already consulted—will, as past president and present member of this Institute, favour us with all the information he possesses as to the future of this question, in which we believe he feels a very deep interest; and that we may also not be wanting the sympathy of many other members in vigilantly watching the course of events, and guarding the interests of this our Eastern Question when it shall at any time claim the attention of Parliament. They will doubtless advise us in what manner we may most effectually claim to be heard, and to protest that the sacrifices already offered up may suffice, that the remainder of the churches may be spared; and in whatever way this memorial may be exhibited it is to be devoutly hoped that not one single member of the Institute throughout the whole kingdom may be wanting to give in his adherence to it. It may be our influence will fall before the Juggernaut of modern utilitarianism, but let us not throw ourselves under it. In expressing this hope we feel there can surely be no occasion in this room to vindicate the architectural beauties, scientific skill, and general excellence of workmanship presented in these churches, which we have in former days so much admired; if we were to do so I think you would only be inclined to resent it, for I do not imagine there are many architects even now who do not reverence the genius of Sir Christopher Wren, by whom most of them were designed; but should there be any such, well, then you have a few other churches, as St. Olave, Hart-street; St. Bartholomew, Smithfield; and All Hallows, Barking, of far greater antiquity, which are quite as likely to disappear as the others if this Act be moved against them, which, far more destructive than the axe of the Puritan—

"Leaves not a rack behind."

Who among us that has reached middle life will not remember the time when the merest forecast of what we have witnessed would have been regarded with nothing less than dismay; when it was considered one of the finest things in the world to view the forest of towers and steeples of the City from the river or any of the bridges, displaying every variety of design? Beautiful, and eminently picturesque! A thing to show visitors when they come to London, and which the late Professor Cockerell,—no mean critic,—thought it worth his while to group together in one picture, which we all know and think so worthy of the subject; and when in the City, did we ever pass an open church-door without entering to view the grand interiors and carved work of the fittings, which, like their towers, offer differences of treatment in each, with almost equal grace in all, besides in their ritual arrangements typifying a most interesting period in the history of the English Church? Apart from business which may connect us with the City, or the receiving of dividends, if we have any to receive, I really know of little else that is left to interest us in it; and yet we have seen one church after another disjointed, broken up and carried away,—and have made no sign!

* The President, the Rev. W. Milman, stated that the greater part of the minority withdrew, and thus rendering the adoption of the Report a certainty; some of the majority withdrew also. Another correspondent said that the total number voting was thirty out of a Corporation of 165.

Then there is the important interest of their archæology and history to be thought of; the existence of these churches preserves much that is left to us of the past as respects themselves, the City, and citizens, for there is hardly one that is destitute of something which gives us a view of bygone days either in ancient or more modern times. Sweep away the church and away goes the story with it; and the time will come when we shall heartily wish we had better appreciated the work and records of our fathers, and had them back again. Whose mantle can have been thrown over us that in our time we are so intent upon pulling down what they have built up? We doubt if it often, if ever, originates with the citizens—unless they be foreigners,—for they have heretofore always loved and venerated their sacred edifices, although haply they may gladly avail themselves of the apparent advantages resulting therefrom; still less should we impute it to the rectors, as it has already appeared they are generally opposed to it. Perhaps it is the Act itself which, possessing some mysteriously spiritual vitality, continually urges on new demands for sustenance, employing human agencies in places from whence we suspect they, obedient to the spirit of the age, look with envious eyes at these prizes now unhappily so much within their reach. It is both fair and politic in all such matters to carefully consider other views besides our own, just as it is in designing a building to study its perspective from more than one standpoint; and therefore it must be admitted that for buildings to be standing in the heart of a great commercial city, where every foot of ground is so enormously valuable, buildings perfectly useless all through the week, and very little less so on Sundays, is a very powerful argument in favour of their removal, and one which we have to face. Fully recognising this, it is yet natural, if in *sheer* despair, to inquire whether these churches cannot in any way be made adequately to fulfil the purposes for which they were intended; and whether the scant population is a sufficient argument for their destruction. If any satisfactory answer could be found to this question it would be a first step towards the solution of the problem; but this is not the place to discuss it. If, however, there is only one weapon of defence that can possibly meet this difficulty, and that is a purely religious one, surely in no assembly can it be out of place to use it merely for that reason; and therefore I ask permission, without in the least attempting to trespass on ecclesiastical ground, to venture on a prediction of what would happen under certain conditions, with unerring truth, viz., that the churches could be all restored to their distinctly religious uses as some of them have been; if two services were held daily in business hours, and they were left open during the interval, so that thoughtful men of business might go in and ask themselves a few questions; and if by any possibility the clergy could be afforded suitable houses, and reside in their parishes, providing attractive services on Sundays, with fervid preaching, thereby drawing not only their small body of parishioners, but also hundreds of persons from other parts, who habitually, for the sake of a walk, even now gladly attend various churches at a distance from their homes, then the reproach of uselessness would be most effectually rolled away like clouds before the wind, and other reasons for their demolition would have to be sought for; the old sanctity of these consecrated places would return, and so permeate the principles of transacting business as to encourage a hope that the disasters and panics which sometimes occur through unscrupulous or reckless trading and speculation might be averted, and in the long run augur far safer and more profitable investments than the acquisition of these sites would ever do.

Further, we can scarcely regard it beyond our province as Englishmen if we consider for a moment the question of ownership. I do not mean the ownership of tenure, supposing that all property is held ultimately at the will of the Crown, but as monumental and architectural edifices, may we not fairly ask if they do not belong equally to the nation at large, and as much for the pleasure of all as to any particular portion of it who may in a sense be benefited by the removal of them?

Another question occurs at this point, viz., what has become of the materials and carvings of those churches which have been already removed? The prevailing impression was that when the Act was passed it was provided the churches should be erected elsewhere, after the same pattern, exactly as they had been. Has this been done in any one instance?

I have now only to say a few words on work which has been brought to pass in some of these churches, which is, in my opinion, only a little less grievous than demolition. I hardly know what to call it; it is certainly not restoration or renovation, for it consists chiefly in altering everything that is possible, and completely changing the character of the composition; perhaps reconstruction approaches more nearly to a description of it, but not entirely so. I say some of them, because others have been either left intact, or done with some amount of good judgment. I could mention instances, which, if they were not so very sad, would be really amusing both in respect to structural work and attempts at decoration in colours, which remind one of the show vans we used to see at some country fair.

In a general way I would express my own individual opinion,—desiring it to be understood that the other members of this sub-committee are in no way implicated, for I do not even know what they think about it,—that the substitution of low seats for the original high pews is a mistake, both as regards the general aspect of the interiors and the necessity it involves to sacrifice much of the carved oak work, which is consigned to a place to rot among the dead in the vaults beneath. Still more do I feel the removal of side galleries,—a thing to be utterly condemned, for they are in most cases structural parts of the church, and the absence of them quite alters its proportions. In a Mediæval church, of course, the banishment of galleries is one of the first things that suggests itself; but in those which were designed to accommodate them, you cannot take them away without deterioration to a large extent, especially when, as is often the case, there are two orders of columns and pilasters, the lower one being specially intended to receive them. Besides this, it is to be considered whether any essential alteration is not an unwarrantable liberty to take with the work of an architect who has passed away.

In the discussion which ensued,

The Rev. C. Mackenzie, rector of All Hallows, Lombard-street, said that although the thanks of citizens and Churchmen were due to the members of the sub-committee for the report they had drawn up, they had treated the subject almost entirely from an antiquarian and architectural point of view. But there were also the pecuniary and ecclesiastical, or rather spiritual, aspects of the question. While the views of the authorities of Sion College had not met with the general approval of the City clergy, who did not think it necessary to remove or destroy so many churches as had been proposed by the College, it was unquestionable that many City churches might be removed with advantage, and the proceeds of the sales of their sites devoted to the erection of churches in other parts of the metropolis where they were more needed. Any one who knew anything of the subject knew that as the City was almost deserted on Sunday, in many of the City churches it was impossible to expect the attendance of more than a mere handful of people. His own experience of the union of benefices in the City had been very satisfactory. He was formerly rector of St. Benet's, Gracechurch, which until within the last few years stood at the corner of Fenchurch-street and Gracechurch-street, greatly to the obstruction of traffic in those busy thoroughfares. It had no architectural beauty externally, and nothing inside to attract, except, perhaps, the rector in his pulpit. It had been removed, the thoroughfares widened, and the benefice united with that of All Hallows, Lombard-street, and the congregation attending the latter church was now three times greater than the congregations which formerly attended either church. In addition, money had been provided for the erection of a large church in a populous neighbourhood, where it would have full scope for spiritual work. There was little fear of too much precipitancy being shown in the demolition of City churches, because, before all arrangements could be completed, so many conflicting interests had to be studied that it was often the work of years to get all parties to agree to any such proposal. He was strongly disposed, for the reasons he had given, to advocate the continued thinning out of the City churches, although there were some whose historical associations and architectural beauty ought to avail for their preservation in the face of the most utilitarian considerations. As to St. Helen's, Bishopsgate, for instance, he would rather lose a limb than that it should be taken down.

The Rev. Thos. Darling, rector of St. Michael's, Paternoster Royal, College-hill, said that after thirty years' service as a City rector, he was becoming more and more convinced every year that Bishop Blomfield did a great and wise thing when he obtained power to remove some of the City churches, and this was the opinion of all who knew how small was the resident population of the City. It was very well for outsiders to be sentimental, but the Church was for living work, and was something more than bricks and mortar. No doubt any one who had any eye for architectural beauty would regret the removal of any one of the spires which, with the dome of St. Paul's, presented such a magnificent *coup d'œil* from the river, especially in the days when the Cannon-street Station was not. But many of these churches had ceased to be useful in their present situation, and as ground was so valuable in the City it was impossible to allow them to remain. If they were situate in the country, it might be advisible to let them stand and go to ruin, but ruined churches in the midst of busy London would be sadly out of harmony with their surroundings. He believed that by removing these useless churches and selling the ground on which they stood, and erecting new churches in populous neighbourhoods with the money, they were best fulfilling the wishes of those who founded and endowed the churches. It might be advisable, in some instances, to retain the towers of some of the churches so removed, but if they were retained, they should be looked after and preserved in a state of decency and order, as was *not* the case with regard to the tower of the demolished Church of St. Mary Somerset, Thames-street, which was now utilised as a bill-posting station. Unfortunately, the administration of Bishop Blomfield's Act was not very logically carried out, as was seen in the case of All Hallows, Thames-street, whose interesting *ante*-Fire tower (the only part of the church worth preserving) had been removed, whereas the church (which was not wanted) was to be retained and a large sum was to be spent on its renovation. As to his own Church of St. Michael, Paternoster Royal, he had spent 1,800*l.* out of his own pocket in decorating it, and with, he thought he might say, good effect, for there had been no attempt at Gothicising. This church was particularly worth preserving, and he was glad to know that it was in no danger of removal. Richard Whittington founded a college adjoining, and was buried in the church, but until Mr. Darling put in a stained-glass window a short time ago there was no memorial of that famous citizen to be seen in the church.

Mr. T. Chatfeild Clarke moved a vote of thanks to the sub-committee and to Mr. Teulon for their papers, and said he was glad to have heard the two clergymen who had spoken give utterance to such liberal and common-sense views on the subject. When any church which had no special architectural beauty or historical associations had served its purpose, it was far better to remove it and to devote the money resulting from the sale of its site to supplying the spiritual wants of struggling populations outside the city. Wherever possible or advisable, the tower or any special feature should be retained. No doubt there were difficulties in the way of developing the site of St. Antholin's Church which precluded the preservation of its beautiful tower.

Mr. Hansard seconded the motion, and suggested that the Institute should communicate with the Sion College authorities with a view to the Institute giving advice on architectural points.

Mr. C. F. Hayward supported the motion, and also spoke in favour of the suggestion made by Mr. Hansard.

Sir Walter Stirling said he regretted that the discussion had departed somewhat from the purpose for which the meeting had been assembled. He had thought that the meeting was to have witnessed a general architectural lamentation, but he must confess that from what he had heard in the paper read by Mr. Spiers he saw no particular reason why any one of the churches he had named should be preserved.

The President, in putting the vote of thanks, expressed his disagreement with Sir Walter Stirling's remark that none of the churches referred to were worth saving. Many of them exhibited in their construction, and in the arrangement of their ceilings and colonnades, features of very great interest.

It was announced that in consequence of the pressure of Sir Gilbert Scott's professional engagements, he would be unable to prepare his paper on St. Alban's Abbey in time for reading at the next meeting (Monday next). Its place would be supplied by a paper by Mr. Thomas Morris on the Metropolitan New Streets Bill.

THE IMPROVEMENT SCHEMES IN THE METROPOLIS UNDER THE ARTISANS' DWELLINGS ACT.

THE evidence which has already been given before Mr. Cubitt Nichols, the Commissioner appointed by the Home Secretary to make an inquiry into the various improvement schemes of the Metropolitan Board of Works, under the Artisans' and Labourers' Dwellings Act, is of a gravely-important character, as showing the deplorable manner in which thousands of the population are still housed and exist in almost every part of the metropolis. An analysis of the facts which have so far been elicited, and the repulsive sanitary condition of the several districts proposed to be dealt with by the Metropolitan Board of Works, may be interesting.

Amongst the localities respecting which evidence has been taken is that of St. George the Martyr, in Southwark, where the Metropolitan Board have a scheme for improving three areas, named respectively the Elizabeth-place area, the King-street area, and the Mint-street area. The Elizabeth-place area contains 26,782 ft.; King-street, 18,147 ft.; and Mint-street, 46,123 ft., being a total of 91,052 ft., where 1,340 persons inhabit houses containing 602 rooms. Elizabeth-place was described as the most melancholy and miserable spot imaginable, whilst the other areas were also in a bad condition. Dr. Bateson, the medical officer of health for the district, said that many of the houses were built back to back, excluding ventilation, and harbouring contagious diseases, and even in cases where they were not back to back, the space between them was very small, and there were no windows. The health of the inhabitants was very bad in them all. There were epidemics, and nearly always constant illness of all kinds. Measles, scarlet fever, small-pox, and whooping-cough were very prevalent. The trade of fish-drying was carried on in the King-street area, not only in the rooms and the streets, but even in the water-closets. He knew no way of improving the condition of the neighbourhood except pulling the houses down. Dr. Matcham, speaking of the Mint-street area, said that the general dilapidated condition of the houses in the area made them quite unfit for habitation, and he could suggest no other remedy than demolition. Sir Joseph Bazalgette, engineer to the Metropolitan Board of Works, described the houses in the several areas as quite unfit to live in. The density of the population was very unhealthy. In one room he saw a woman and a number of children in a wretched condition, and the general appearance of the place reminded him of an Irish cabin. With regard to the Elizabeth-place area it was proposed to devote the whole of it to improved dwellings five stories high, which would have the effect of opening up the area, and securing thorough ventilation. There was a provision in the scheme for 230 rooms, instead of the 179 existing. There would be 20 single-roomed houses, 75 double-roomed tenements, and 20 with three or more rooms. The density of the present population would be much reduced. On the King-street area it was proposed to make the dwellings four stories high, containing 200 tenements of two, three, or more rooms. As regards the Mint-street area, the scheme proposed to have 140 single tenements, of which 90 would contain registered lodgers, 90 two-roomed tenements, and 20 three-roomed houses. It was also proposed to widen the streets in each of the areas. Mr. F. W. Goddard, valuer to the Metropolitan Board of Works, said that the property was in a wretched condition, and he described Mint-street as the Alsatia of London. Mr. Vigers, whilst under examination, stated that the land would be let by the Metropolitan Board to builders, whose operations would be under the supervision of the Home Secretary. The opposition to the scheme by the owners of some of the houses was of a rather remarkable character. Mr. Newell said he did not think there was so much disease in the district as was stated. The principal disease the population suffered from was starvation. If the houses were demolished the tenants would be driven into the streets, for they were so dirty that the new landlords would not take them in! The same doctrine was urged by Mr. Robert Gager, an owner in Mint-street, who said that if the lodging-houses were removed the lodgers would not be taken into new premises, as they were excessively dirty and ragged; whilst Mr. Levy, another owner, said he had lived there many years. He had brought up a family of nine children, and had never paid 5*l.* doctors' bills in his life. Several other owners also contended that the areas were healthy; and objected to the scheme on the ground of its cost, which is estimated at 59,760*l.*; but Mr. Williams, the counsel who appeared for the Metropolitan Board of Works, urged that as no evidence had been brought forward against the scheme the Act of Parliament ought to be enforced. The proceedings closed with an observation from the Commissioner that he would make a survey of the houses, and draw the attention of the Home Secretary to their condition.

The scheme for the improvement of Pear Tree-court, Clerkenwell, has also been before the Commissioner. Mr. Philbrick, Q.C., who appeared on behalf of the Metropolitan Board, stated that the tenements were in a most wretched condition, and that if ever an improvement scheme were supplied in connexion with any property it ought to be brought into operation here. The condition of the property had for years back been a reproach to the neighbourhood, and taking into account those persons who were removed from the district, sick, to hospitals and infirmaries, and who there died, the mortality of the neighbourhood was nearly 40 per 1,000, or almost double that which prevailed over the rest of the parish. Dr. J. W. Griffith, the medical officer of health for the parish, deposed to the thorough unhealthiness of the houses within the Pear Tree-court area. The rooms were small, dark, and overcrowded, and nothing could be done from a medical point of view to put the houses into a satisfactory condition. They should be pulled down, and other tenements built in their stead. Sir Joseph Bazalgette said he had inspected the property, and he did not see that there was any way of dealing effectively with it except by demolishing it and constructing tenements which would be better in all respects than those which at present existed. Sufficient and improved accommodation would be afforded by the scheme to those who would be displaced. In order to provide that accommodation it was proposed to make the new buildings four stories high, and to increase the number of rooms from 216 to 270. It may be incidentally stated that the Pear Tree-court area forms the site formerly occupied as a Benedictine nunnery, and has a still further historic interest from the fact that one of the tenements intended to be taken and demolished is a wooden building named Cromwell House, traditionally said at one time to have been occupied by the Protector.

Another area selected by the Metropolitan Board for improvements under the Act is that known as Great Wild-street, St. Giles's, and evidence respecting it has likewise been given before the Commissioner, which shows that its sanitary condition is equally bad with those already described. Dr. Levett, the Medical Officer of Health for the district, said he had known it all his life, and it was not fit for the habitation of human beings. The death-rate of the whole district was 33 per thousand, but in this particular area he estimated it at 39 per thousand at the very least, the plot having been long notorious for its unhealthiness and heavy death-rate, in consequence of its being the constant abode of zymotic diseases in their most contagious form. The lawless character of the occupants of this locality are best described by the police, who state that they break off the water-cocks and sell them, and use the covers of their dust-bins for firewood. Sir Joseph Bazalgette described the overcrowded and unhealthy condition of the district. The population was at the rate of 1,406 per acre, as against 800 in other areas. He had seen thirty people living, eating, working, and sleeping in nine small rooms. The scheme of the Board provided for the erection of five and six story houses, which, with better sanitary arrangements, would lodge more than those displaced. Great Wild-street and Prince's-street would be made 40 ft. wide.

The Bedfordbury area, described by the Medical Officer of Health for the district as the "plague-spot" of St. Martin's-in-the-Fields district, has also been before the Commissioner. Evidence was given showing that the scheme of the Board would clear away the blind alleys in the neighbourhood, which are destitute of both light and ventilation. The area proposed to be cleared is about an acre in extent, and on the site it is intended to build houses six stories in height, with special accommodation in the basement for the barrows and stock-in-trade of the costermongers, who are said to constitute about one-tenth of the population.

The proposal to deal with the Petticoat-lane area in the City, off Whitechapel, has likewise been the subject of an inquiry before the Commissioner. Dr. W. Sedgwick Saunders, the medical officer of health, spoke to the dilapidated and unhealthy condition of the houses in the district. Dr. Fowler, surgeon, also gave evidence, stating that considering that the whole block was intersected by blind courts and alleys, nothing short of demolition would remedy the evil; and Dr. Liddle, who has been twenty-one years medical officer, gave similar evidence. Under the scheme houses of four stories in height are to be erected, with widened streets.

The entire number of schemes at present is nine, and those in Westminster and Islington have yet to be investigated by the Commissioner.

THE LIVERPOOL WATER SUPPLY.

DURING the last twelve or eighteen months a fierce and bitter controversy has been going on at Liverpool respecting the future supply of water to that town. It is admitted on all hands that the present sources of supply are inadequate to the requirements of that important community, and that new works of some kind or other must inevitably be constructed. The point in dispute is whether the additional supply is to be obtained from wells in the local red sandstone, or is to be secured on the gravitation principle. One section of the community contends that there is an abundance of water in the red sandstone formation in the locality, and that there is no necessity for going to the enormous expense of bringing water from a distance, whilst others are of opinion that the supply from the wells would be uncertain, and altogether inadequate. This is the view taken by several eminent engineers, and also by the water-committee of the Corporation Mr. Bateman and other engineers have been employed, and have reported upon projects for supplying the town with water from the Cumberland and Westmoreland lakes and other places, and the Water Committee have on several occasions recommended the adoption of one or other of these several projects, but up to the present time no plan has been definitely agreed upon owing to the advocates of the local well supply demanding that its capabilities should be tested; and this has now been decided upon. At a meeting of the Town Council which has just been held, the Chairman of the Water Committee proposed that a tender of Messrs. Mather & Platt, of the Salford Ironworks, be accepted, to sink a bore-hole at Bootle, not less than 1,000 ft. deep, to test whether or not the local red sandstone contains sufficient water for the supply of Liverpool. Messrs. Mather & Platt undertake to provide the necessary pumps, engines, and boilers, capable of raising ten million gallons of water per week, from a depth of 400 ft. below the surface, and to deliver the same at 90 lb. pressure per square inch at the surface of the ground. They likewise undertake to erect the necessary buildings, together with a surface condenser. The engines are to be compound, and of the best design, workmanship, and construction. The amount of the tender is 15,900*l.*, and the work is to be completed within two years from the date of the acceptance of the tender. Although the chairman of the Water Committee advised the Council to accept the tender, he openly stated that there was not a single member of the committee who believed that the ultimate supply of water for Liverpool could be got from local sources. At the same time the committee were anxious to carry out experiments with a deep bore-hole. The chairman at the same time intimated that the arrangement would not prevent the committee from continuing their labours with the view of having an alternative scheme ready at hand if the deep boring proved a failure, as the wants of the community were running dangerously near to a dearth of this first necessary of life. In the course of a discussion on the subject, Mr. Alderman Weightman (formerly the borough surveyor and architect) remarked that he had begun to feel ashamed of holding a seat in the chamber, because he saw so much vacillation amongst members of the Water Committee themselves,

and such a determination on the part of some members of the Council to embarrass the proceedings. The proposal for the acceptance of Messrs. Mather & Platt's tender was adopted, and the deep boring process will now at once be commenced.

VALUE OF PROPERTY IN SHOREDITCH.

LAST week Messrs. Reynolds & Eason sold, at the Mart, a large amount of building estates and other property in Shoreditch, which consisted of seventeen lots, and contained altogether the large ground area of 50,000 ft. There was a very numerous attendance, and the competition was exceedingly spirited, the whole of the several lots being disposed of, and realising an aggregate sum of upwards of 25,000*l*. The property included seventy-two houses, besides workshops, manufacturing premises, and vacant land, partly lying between Curtain-road and the High-street, Shoreditch, adjoining the plots of building land now being offered for sale by the Metropolitan Board of Works on building leases, which the Board acquired for the construction of the new thoroughfare between Oxford-street and Old-street. The property was stated to produce a gross rental of 2,000*l*. a year. The first lot offered consisted of five freehold houses in New Norfolk-street, with a ground area of 1,450 ft., and producing an annual rental of 148*l*. This lot realised 1,330*l*., the auctioneer observing that all the lots were for absolute sale, and would be sold to the highest bidder. The next lot, adjoining, containing twenty-two houses and workshops, covering an area of 10,500 ft., and producing 464*l*. per annum, was knocked down for 3,960*l*. A building site adjacent, containing 6,000 ft., on which there are fourteen houses, producing 252*l*. per annum, realised 2,310*l*. It was announced that the North-London Railway Company had given notice for the compulsory purchase of a portion of this lot. A corner public-house, known as the Norfolk arms, containing 1,350 ft., and producing 60*l*. per annum, was sold for 1,530*l*. A building site in Curtain-road, containing 5,300 ft., on which there are five cottages and a warehouse, producing 71*l*. per annum, fetched 1,510*l*. A block of six houses in Norfolk-place, Curtain-road, with a ground area of 2,700 ft., and let for 118*l*. per annum, was sold for 1,360*l*. For the next lot, consisting of spacious business premises, in Curtain-road, and described as being in the heart of the cabinet trade, there was a very spirited and close competition. The property, which has a ground area of 3,800 ft., and is let on lease for forty-five years, at 50*l*. per annum, nine years of the lease being yet unexpired, was sold for 3,510*l*. It was stated that the premises were substantially rebuilt a few years ago, at a cost of 2,000*l*., after having been destroyed by fire, and that their estimated annual value at the present time is from 250*l*. to 300*l*. per annum.

"WORKING MEN IN THE OLDEN TIME."

THIS was the title of a lecture recently given in York by the Rev. C. H. Wellbeloved.

After some introductory remarks, the lecturer said that under Saxon rule there were four classes of the community—nobles, freemen, freedmen, and serfs. In describing the position and characteristics of these different classes, he observed that the freemen corresponded with our middle-class population. The freedmen were those who had purchased or otherwise obtained their liberty. The majority of those moved into the towns, and formed themselves into guilds and corporations, which were the foundation of our modern municipal institutions. Having at length described the miserable condition of the slaves or thralls, and stated some of the crimes and defaults by which freemen lost their liberty, and became slaves, Mr. Wellbeloved said many of them were employed about the offices and houses of their masters, and became handicraftsmen of various kinds. If they could obtain their liberty they still carried on their trades. The lecturer then related the general character of the Saxon penal system, and its effect upon the people. The manufactures of that period were but few in number, the towns being small and thinly peopled. York, the greatest city mentioned in Domesday Book, contained only 1,418 houses, and of those 540 were uninhabited. The Saxon laws laid great restrictions upon trade of all kinds, with a view to secure honest dealing, though they also facilitated the levying of dues. The lecturer then passed on to notice the manner of holding markets and fairs, and having sketched the condition of the clergy in those times, he went on to notice the state of our ancestors under Norman rule. He said the condition of the serfs remained almost unchanged, though the other classes suffered considerably from their Norman conquerors. Under the Norman feudal system the whole condition of things was altered; the Saxon freeholders gave place to the Norman vassals, who were little better off than the Saxon serfs. The lecturer then gave a long account of the state of the barons under William the Conqueror and his sons, and the anarchical condition of Stephen's reign. During that dire chapter in English history, the degradation of the Saxon freeman was completed by thrusting all degrees of tenants and servants into the common slavery, or at least into the strictest dependences. They continued in that state until the reign of John, from which time the true English nation dated its rise. The servitude of the villeins at the end of the twelfth century was as complete as that of the Anglo-Saxon thrall, and the great charter extorted from King John marked the first step upwards. The development of trade was one effect of the charter, and towards the end of the thirteenth century many improvements had been introduced into agriculture, arts, and manufactures. Agricultural labourers were very poorly paid, to judge from the wage of a haymaker, which was 1d. per day. The building trade must have been very brisk, considering the number of baronial castles, monasteries, and churches that were then built. In the reign of Stephen no fewer than 1,115 castles were erected. The dwellings of the poor were but rude cabins without chimneys, built of wood and covered with straw or reeds. Great attention was given to the working of metals for the purposes of armour, and the manufacture of church utensils in gold and silver was carried to great perfection. Linen and woollen manufacture may be said to have taken its rise in England in the middle of the thirteenth century, when several Flemish weavers came over to this country. The first two Brabant weavers that came over to England settled in York. Protection and special advantages were offered by proclamation of the King to any other weavers who would come and settle in England, and it was then that the English working men were rescued from slavery. The rate of wages and prices of various commodities contrasted curiously with those of the present day. Bread was the principal diet, there being no potatoes, and very few vegetables, which were difficult to obtain. In 1299, the price of a lamb in London, from Christmas to Shrove-day, was 1s. 4d. In 1350, the price of wheat per bushel was 1s. 10½d., and of an ox 1*l*. 4s. 6d., while the labourer's wage was 3d. a day. The soldier had 6d. a day. In the beginning of the fourteenth century slave labour was superseded by free labour. In conclusion, the lecturer briefly touched upon the social and industrial life of England during the fourteenth century, and said the working-men of the present day ought to be supremely happy. The great things which had been accomplished by them were an earnest of what the future held in store for them.

CHINESE PROGRESS IN SCIENCE.

ON April 11th a meeting took place at the Polytechnic Institution, Regent-street, to witness some of the phenomena connected with the polarization of light and other branches of optics, as shown by a new apparatus intended for an institution at Shanghai. The demonstrations were conducted by Mr. J. L. King, who delivered a brief lecture explanatory of the scientific principles which determine the phenomena, and who stated that the occasion derived its chief interest from the fact that it marked an awakening in the Chinese mind to the importance of scientific instruction. The Chinese institution owes its origin mainly to the influence and exertions of Sir Walter Medhurst, lately our Consul in Shanghai, who was chairman of the Shanghai Committee, and Mr. Fryer, who acts as honorary secretary. Their views have been energetically supported by our ambassador, Sir Thomas Wade, and by many of the leading mandarins, among whom may be mentioned Li-Hung-Chang, Feng-Chu-ju Taotai of Shanghai, Hsu-Tsuch-Tsun, and his sons, who are well known throughout their own country for their technical skill and scientific enlightenment, and by many others who favour the importation of Western knowledge of every kind as calculated to render the most important services to their country. A building has been erected at Shanghai, within which lectures are to be given and interesting apparatus and processes shown; and a reading-room provided with suitable works, is already in active operation. These measures are expected and designed to lead up to a Chinese International Exhibition, at which the most interesting productions of the East and West will be brought into juxtaposition.

SOUTHPORT GLACIARIUM.

THE foundation-stone of the buildings about to be erected by the Southport Glaciarium and Ice Manufacturing Company was laid last week, with some ceremony, by the Right Hon. Lord Clarence Paget, many gentlemen of local influence being present. The directors have secured a central site, having a frontage of 120 ft. to Lord-street, and containing an area of about 6,850 yards. On this plot of land they have commenced erecting a real ice skating-rink, with other buildings for the accommodation of the machinery and manufacturing of ice. The buildings architecturally are "Queen Anne" in character, and are being faced with red bricks. The size of the rink (surface of ice) will be 144 ft. by 54 ft. The architects are Messrs. Asahel P. Bell & Geo. Freeth Roper, of Southport and Manchester; and the engineer is Mr. Beck, of London. Messrs. Bridge & Sons are the contractors. Considerable progress has been made, and it is expected that the rink will be opened in the early part of June.

MR. F. T. MAPPIN'S "COCOA-HOUSE," HIGHFIELD, SHEFFIELD.

A NEW building has been erected at Highfield, Sheffield, by Mr. F. T. Mappin, for the purpose of offering to working men the enjoyments and most of the comforts of club-houses, whilst avoiding the cause which too often makes working-men's clubs a mistake. It is to be, as its name applies, a cocoa and coffee house; and it will be conducted upon precisely the same principles which have been found to answer best in the management of the cocoa-houses in Liverpool. There are several there, and the success attending them is so great as to justify the belief that similar houses will ultimately be found in most of our large towns. Hitherto they have been confined, we believe, to Liverpool; and it was a visit to one of them that induced Mr. Mappin to make a similar experiment in Sheffield. The building in Highfield has been specially erected for the purpose from designs by Messrs. Hadfield & Son. It consists of two stories. The first floor is one large room extending the entire length of the building. This will be furnished with chairs and tables, and with marble-topped circular tables, similar to those seen in many of the London and provincial refreshment-houses of the better class. Into this room any one will be at liberty to go. A cup of tea, coffee, or cocoa will be obtainable for a halfpenny, and a pint for one penny. Bread and butter can also be purchased at an equally cheap rate, or persons can bring their own food and eat it there. A broad staircase leads from this room to the story above. Here there is (according to the *Sheffield Independent*) one of the finest billiard-rooms in Sheffield. Separated from the billiard-room by a pair of folding-doors is the reading-room, which will be supplied with newspapers and magazines. The reading-room and billiard-room are equally open to those who visit the institution, but a small charge will be made for the use of the billiard-tables, chessmen and tables, and for packs of cards. Between the building itself and the steward's house at the back is an open piece of ground intended to be used as a skittle-alley. It will be covered in by a roof of glass. It is intended that the building shall be opened at half-past five in the morning, and remain open till eleven at night.

The institution was opened on the 9th inst., when Sir Harcourt Johnstone, M.P., Mr. Roebuck, M.P., and Mr. Mundella, M.P., were present.

Mr. Mappin's laudable undertaking deserves abundant success.

New Lectern, Banbury Parish Church. On Easter Sunday the new lectern in Banbury parish church was used for the first time. It was designed by Mr. A. W. Blomfield, architect, and was presented by Messrs. J. & T. Davis, builders. The lectern is of English oak; the eagle has been carved in wood by Messrs. Rattee & Kett, of Cambridge.

NEW PUBLIC HALLS.

Grangemouth.—The foundation-stone of a new hall which is being erected by the congregation of the Free Church at Grangemouth has recently been laid. The plans have been prepared by Mr. David Smart, architect, Perth, and the following contractors have been engaged for the work:—Mason, Messrs. Cuthbertson & Co., Grangemouth; joiner, Mr. Andrew Mickel, Linlithgow; plaster and slater work, Mr. John Murray, Grangemouth; plumber work, Mr. Patrick Mickel, Falkirk.

Smethwick.—On Easter Monday the Temperance Hall erected in Cross-street by the Smethwick Temperance Society was formally opened. The building is in the Gothic style, and is of brick with stone dressings. Near the main entrance and on the ground-floor are two anterooms, the hall being at the rear. The latter is well lighted, has a gallery at one end, and will accommodate nearly 400 persons. The upper portion of the building contains a large room, and this the committee intend to be used for meetings of Good Templars, Odd Fellows, and kindred societies; in the basement provision has been made for cooking purposes. Mr. John Harley, Smethwick, is the builder, and the estimated cost is 1,800*l.* The architect was Mr. F. Lloyd, of Birmingham.

NEW BANKS.

Inverness.—In consequence of the business of the Inverness branch of the Aberdeen Town and County Bank having increased considerably of late, the directors have found it necessary to make a change from Bridge-street to more commodious premises. After some negotiations, the prominent block of buildings known as Hamilton-place was purchased for 3,700*l.*; and considerable alterations are intended to be made, so as to suit the requirements of a banking establishment. Mr. Lawrie is the architect.

London.—The foundation-stone of the London branch office of the Royal Bank of Scotland, Bishopsgate-street, has been laid. The new building, which will stand on the site of the London Tavern, an area of 6,500 square feet, will be Italian in character, and will be treated in two orders, Ionic and Corinthian, the floors being taken under each order. The material of the façade will be Portland stone, and the height will be about 70 feet, which was the height of the London Tavern. Internally the building will be constructed with fireproof floors throughout, ample accommodation being given in the way of strong rooms and lavatories. A bold and handsome staircase will give access to the whole of the upper floors, and it will be surmounted by a lantern light. The bank will occupy only a portion of the new building, and to this there will be a distinct entrance. The cost of the building will be about 40,000*l.*; the site was purchased for 80,000*l.* Mr. T. Chatfeild Clarke is the architect, and Messrs. Merritt & Ashby the builders, Mr. James Wilkinson acting as clerk of works.

COMPENSATION CASE.

THE NEW RIVER COMPANY *v.* THE CORPORATION OF LONDON.

THIS was a somewhat novel compensation case, which occupied two days at the Sheriffs' Court, Red Lion-square, in respect to the freeing by the Corporation, out of the Coal Dues, Tottenham Mills-bridge, on the River Lee, being the first bridge, after the Metropolitan bridges, which came under the Act, 1869, and the subsequent statute.

The claim, as presented by the New River Company, was about 4,000*l.*, and on the part of the Corporation it was described as "enormous and extravagant." The New River Company had leased the bridge to a person named Ware at 12*l.* 10*s.* per year, with a speedy termination of the lease on notice, the tolls, independant of the wharf tolls, averaged for the last four years 152*l.* a year. The lease granted to Mr. Ware included about fifty acres.

Mr. R. Ritchie, surveyor, valued the bridge at sixteen years' purchase, and, with the other property, he estimated the claim, including the 10 per cent., to 3,560*l.* As only the bridge was required by the Corporation to free the same to the public, there were deductions to be made on the part of the Corporation, which, it was alleged, should be considered in estimating the value of the property.

The contention on the part of the Corporation was that a term of sixteen years was not to be taken as the value of a bridge.

The other valuer of the New River Company, Mr. Crantar, stated that a purchaser of the bridge ought to obtain 10 per cent. for his money.

Another item of the compensation was in respect to the Great Eastern Railway Company, who had taken some land with right of access, and it was denied that the New River Company had a right to claim either 700*l.* at present or 350*l.* in reversion.

During the investigation it appeared that the New River Company had exercised exclusive rights over the bridge, and tolls were demanded for vehicular, but not for pedestrian traffic, and they had power to exclude all vehicles which they considered objectionable. The bridge was used by the Great Eastern Railway to their cattle lairs, under the lease they had obtained.

Mr. Under-Sheriff Burchell, in placing the case before the jury, pointed out the peculiar circumstances surrounding the claim, and went through the several items contained in the claim. With respect to the 10 per cent. for compulsory sale, he told the jury there was no law on the subject, but he advised them to adopt the rule which had been followed in other cases. He directed the jury to find a verdict for the casual tolls, and also as to the value of the tolls granted to the railway company, which had been estimated at 35*l.* a-year, and to state whether it was as to the present value or in reversion, and the matter might go before the Chancery Division. Besides the customary 10 per cent., the jury would, if they thought proper, award a sum for a fence to protect the land belonging to the New River Company, which would result as consequential damages by the bridge being thrown open to the public.

The jury retired for half an hour, and on their return found a verdict for 1,600*l.* for the tolls of the bridge, and 150*l.* as the reversionary interest as to the tolls leased to the railway, assuming, they stated, that the lease would stand. They gave no sum for "consequential damage." A verdict for 1,750*l.* was accordingly entered.

ACTION FOR LIBELLING A BUILDER.

HOOPER *v.* COX.

THIS was an action for libel brought (in the Exchequer Division, before Baron Pollock and a special jury) against the proprietor and editor of the *Borough of Hackney Express and Shoreditch Observer*. The defendant pleaded that the publications were not libellous, were not issued with malice, were fair comments upon a matter of public interest, and were true in substance.

Mr. Morgan Howard, Q.C., Mr. Lumley Smith, and Mr. Charles Scott were for the plaintiff; and Mr. Serjeant Parry and Mr. Robert Lane appeared for the defendant.

The plaintiff was a builder (we take the report from the *Morning Advertiser*), and at the time of the publication was erecting forty-seven houses for the humbler classes by the side of the railway embankment at Hackney-wick. The defendant was the proprietor and editor of the *Borough of Hackney Express and Shoreditch Observer*. Upon the 19th of August, 1876, the following passage appeared in that paper:—

"Express Notes. By a Looker-on.—To take a note of useful things I am prone, and give the public knowledge little known. Has the attention of Mr. Lovegrove, the surveyor of the Hackney Local Board, or Dr. Tripe, the medical officer of health, been drawn to the composition and surroundings of a new street of jerry houses now being constructed alongside the railway embankment at the 'White Lion,' Hackney-wick? If it has not, the sooner it has the better, so that the District Board of Works may be furnished with a report at an early meeting. I do not know who is the builder or builders of these houses, nor do I care to know; but from personal examination of their design, arrangements, and materials, I unhesitatingly say that they are not only a most rubbishing lot of dwellings, but they are ill-constructed, and that sanitary requirements have received little consideration in their erection, either in the matter of foundation or drainage. They are of a class of slap-dash and slop work; in fact, not to mince matters too nicely, the workmanship is scamped in every branch that has contributed to their erection and completion. The stairs are mere step-ladders of very steep incline, boxed in between two flimsy stud partitions, said partitions and stairs being made to contribute to the support of the floors above. The stairs are break-neck, and most dangerous in case of young children, or men under the influence of drink the timber scantling, floor joists, and roofing rafters are of the poorest kind, and the joinery work, doors, sashes, and fixtures, are most miserable specimens of workmanship, bad in material, and of insufficient strength. In half a dozen years the general condition of the houses in this new street will be 'tumble-down houses.' The mortar of the brickwork is positive rubbish, with no more cementing qualities than if it was a lump of soap, and the plaster upon the walls is a conglomeration of dirt skimmed over with a white coat not much thicker in substance than what two coats of limewash might produce. These 'jerry' houses are built to sell, and in a short time they will prove they were also built to kill. To the unprofessional eye, on the outside they will, of course, appear to be nice genteel residences for working people, or others with a limited income. Let Dr. Tripe and Mr. Lovegrove visit them and examine them, or ask our professional contemporary, the *Builder*, to send its commissioner, and I am certain my strictures will be borne out. When will a stop be put to the manufacture by wholesale of murderous houses?"

The plaintiff's solicitor wrote to the defendant in reference to that publication, and on the 9th September the letter and its reply, and some further remarks upon the buildings, appeared in the defendant's newspaper. It was contended on behalf of the plaintiff that he was entitled to substantial damages in respect of such publications.

Baron Pollock, while the case was being opened by Mr. Morgan Howard, said that the libel was so very clear, and that while the defendant might be able to substantiate a part of the publication, yet, taking it as a whole, the plaintiff could not stand by and let such things go on.

Mr. Serjeant Parry explained that he appeared for the defendant, who had no knowledge whatever of the plaintiff, and who had made the remarks referred to wholly in the interest of the public. He was not insensible to the language in which some of the remarks had been made, but he would say that if ever there had been an editor actuated by a singleness of motive, it was the defendant in the present case.

Considerable consultation then took place between the learned counsel and the parties in the case. Ultimately it was agreed that a verdict should be entered for the plaintiff—damages 40*s.*; a certificate granted for costs and for a special jury; and that the defendant should make a handsome withdrawal of the language used in the publications.

Baron Pollock considered that the right course had been adopted, and that while in the present case too direct a charge had been made against a man of business, yet it was quite right that the defendant should exercise his quasi-public duty in reference to sanitary and other matters which were of the most important public interest.

Judgment was entered for the plaintiff accordingly.

A LAW WRINKLE FOR BUILDERS USING STRANGE ROADS.

BURDON *v.* WHALEY.

THIS action (Durham County Court) should form a legal precedent to builders erecting scaffolding, and laying building material, rubbish, &c., on strange land.

The plaintiff sought to recover compensation of the defendant, a builder,—not vindictive damages,—but to test a legal right.

Mr. Burdon said he leased a piece of land from the Dean and Chapter of Durham, and it being necessary to get a road through, he bought the reversion of another piece of land. He then reformed the "reversion" road by making it a little wider. He also made a retaining wall for the purpose of economising space and to keep up the road, as he intended to erect a shed. The wall was higher than the footpath, and the footpath higher than the cart track. Over the top of the wall he put palings about 8 ft. high, and also made a footpath 2 ft. 6 in. wide, and placed check-stones next to the cart-track. Commissioners also granted to Mr. Renney a right of road to land which adjoined witness's. When plaintiff purchased the land he built a candle factory on it. After this a piece of the same land was sold to the Manchester Co-operative Society to erect soap-works on it, the contract for which was let to the defendant, and whose carts and wagons used his (the plaintiff's) road for leading building materials, and in doing so cut it up to such an extent that they made it almost impassable. He also found a large quantity of masons' *débris* laid upon the road, which raised it above the level of the footpath, which was now about 2 in. above the retaining wall, and the road was again rutted. Witness made a gutter on the south side of the road, and this was now filled up with broken bricks and other like material. Raising the road had caused the water to fall into witness's yard. The top of the retaining wall had given way owing to the pressure against it by the footway being raised. Upon asking Mr. Whaley, the defendant, if the rubbish had been put on the road by his authority, defendant said yes, and that he would put upon it what he liked, that he would have none of witness's nonsense, but would have *war*. Witness replied that if he, Whaley, thought he could do what he liked with his, the plaintiff's, freehold, they would get to war very soon. He also told the defendant he had no right to dig holes in his freehold for the purpose of putting up scaffold-poles. The scaffold-poles were erected on his, plaintiff's, land. Never dedicated the road to the public.

The answer to the case was, that the road had long been used as a public one, and that the defendant could not get his building materials on to the building he was erecting without making use of the thoroughfare. That the stones and rubbish shot into the road were put there for the purpose of repairs.

The learned Judge said it was clear that neither builders nor other people had a right to dig holes in a road that was dedicated to the public, or a freehold, for the purpose of sticking up scaffold-poles, and in this instance alone the defendant had committed a trespass. Again, the road in dispute had never been repaired as a public highway, and, indeed, did not seem to have been dedicated to the public, and therefore the defendant had no more right to use it than he had to drive his horses and carts through a freehold garden. If persons chose to take land for building purposes, it behoved them first to find out a clear title of road to it. The builder in this instance had not taken an over civil view of his pretended right; if he had he would have avoided the war he threatened the plaintiff with. As heavy damages were not asked for, the judgment would be nominal, with costs for the plaintiff.

It transpired that the buildings in question were now completed.

THE NATIONAL MONUMENTS BILL.

SIR,—I consider that Mr. Hosken has absolved himself from just blame, with reference to the ruthless destruction of the old Tolmen at Constantine, Penryn. His notes in the *Builder*, vol. xxxi., p. 293, and vol. xxxv., p. 384, prove that the wanton mischief was effected without his privity or consent. In the *Builder*, vol. xxxi., p. 293, quoting from the *Gentleman's Magazine* for May, 1844, N.S., vol. xxi., p. 487, note,—I stated that the late Sir Charles Lemon, of Carclew, had offered to purchase the Tolmen from its then proprietor, but as the latter demanded 500*l.* for the Tolmen, the negotiation was broken off. The destruction of this relic would justify the enactment of Sir John Lubbock's useful law for the preservation of such monuments. In the *Builder*, vol. xxxi., p. 293, is a list of many of them.

In the Isle of Anglesea I have seen the remains of a fine cromlech, the covering-stone having been destroyed by a former tenant "in a drunken spree," as I was informed. A similar accident has occurred to the large cromlech, engraved in King's "Munimenta," vol. i., p. 236, and described by the author as a double cromlech (1799), "near an house called Trevor, two miles and a half from Beaumaris, in the road to Plasgwyn," and that "the only material difference between this cromlech and the former

[at Plas Newydd] is that the second or inferior altar [yet extant] is placed a little further off from its lower end, and that its top is somewhat gibbose." The larger cromlech was placed on four pedestals, two of which remain erect.

C. C.

STONE WORKING MACHINERY.

Sir,—In view of the impending struggle between the masters with their contracts, and the masons with their abitrary and unreasonable demands, it will be some consolation to find that machinery will play a very important part in the question between capital and labour. Machinery for sawing stone, and machines for facing and surfacing stone, as also planing and moulding stone, to any required pattern or moulding, were used at the mansions, Grosvenor Gardens and Victoria-street, St. Thomas's Hospital, Burlington House, New Post Office, St. Martin's-le-Grand, and many other buildings in London and the provinces. It requires no patent machinery for the purpose of working and converting stone, and to prove conclusively from careful and reliable data, the saving to the builder or contractor by the use of such machinery. I instance this fact in order to submit that if the workmen's society persist in their pernicious course, the engineer, with simple and effective machinery, will most certainly step in and assist by mechanical agency what the masons refuse to perform.

It cannot be denied that there are many pieces of mouldings and workings in stone that require hand labour, and must continue to do so; but, on the other hand, there is an immense amount of work now done by hand-labour which could be easily wrought by machinery, and it remains to be seen whether the masons will compel masters to adopt machinery for the maximum part of their work, and hand-labour for the minimum.

I am of opinion that Messrs. Schofield & Co.'s suggestions to the trade will be beneficial, inasmuch as they will open the eyes of the masons to their true interests, or else they will materially assist in instituting a new class of men, specially trained to work, dress, mould, and convert stone by machinery to any form and shape at about one-fifth the present cost of hand-labour.

J. Rotheron.

SANITATION.

Sir,—I take the liberty to suggest the great advantage to sanitary improvements, and their general study by the public, were your influential paper to publish the sanitary arrangements *in plan* of all the buildings you illustrate in the *Builder*. All the other arrangements are detailed in text and plans. Would there not be as palpable gain in adding the sanitary appointments?

Lionel N. Bonar.

CHURCH-BUILDING NEWS.

Brooks's Bar.—The foundation-stone of the new church of St. Bride, Talbot-road, Brooks's Bar, has been laid. The plans of Messrs. Pennington & Bridgen, architects, were selected in a limited competition. The church will be cruciform in plan, and will consist of nave, north and south aisles, transepts, and apsidal chancel. A tower, with spire, will rise at the crossing of the nave, choir, and transepts to a height of 150 ft. The only entrance to the church will be through a western porch. The external walls will be faced with Yorkshire parpoints, the dressings being in Runcorn stone. The arches and piers of the nave and chancel will be of stone, the walls only being plaster. The seating will be of pitch pine, and will afford accommodation for 800 persons. Mr. John Wilson, Erskine-street, Hulme, is the contractor, the total cost being estimated at 7,500*l*. At present the nave, aisles, and porch only are being erected, which will involve an outlay of 6,000*l*.

Northampton.—It has been resolved to restore St. Andrew's Church, Northampton. The church, although only dating back some thirty years, has become very dilapidated. Externally, the stone facings, which are of softer material than the other portions of the wall, have crumbled considerably away, in consequence of the action of the atmosphere. Some repair is also needed to the roof. It is proposed to entirely reseat the church, to provide a new pulpit, and to put in a warming apparatus. The plans for the carrying out of the work have been prepared by Messrs. Law & Sons, whose estimate of the cost is 1,000*l*.

Walsall.—A vestry meeting has been held at Walsall to consider the plans which have been prepared by Mr. Ewan Christian for making certain alterations in the parish church. The plans show the organ-gallery entirely done away with, so that the arch is to be entirely opened out in order to show its proportions in the way which they deserve. Additional seats are provided in the chancel for the choir, to whose use it is proposed to give up the present vestry. Another vestry is shown on the south side of the chancel for the clergy, and over this is the organ chamber. At present a large space in the nave is occupied by a combined pulpit, reading-desk, and clerk's desk, popularly known as the "three-decker," and it is, therefore, proposed to so alter the seats as to fill up this space, and leave only a straight aisle down the church,—the pulpit being placed against the north side of the chancel arch, and the reading-desk at the opposite corner. The other seats throughout the church are also proposed to be altered, the result of the whole being a gain of eighty-four sittings and the leaving of the back of the transept galleries open for the better ventilation of the edifice. The plans were approved, and it was resolved to apply for a faculty to carry out the works.

Croglin.—Application has been made to the Worshipful Chancellor Burton, at the Carlisle Consistory Court, on behalf of the Rev. J. H. Green, rector of Croglin, and the churchwardens of the same place, for a faculty to authorise them to remove the present parish church and to make use of the materials in the erection of a new church to be built upon an adjoining site; and also to remove the present churchyard wall, if found necessary, and rebuild the same. In support of the application the rector produced a resolution of a duly-summoned vestry meeting, and stated that of the estimated cost (about 700*l*.) 530*l*. were already in the bank, 100*l*. had been promised by Lord Leconfield as soon as the church was finished, and there were other promises which would enable him to enter into the requisite bond for the completion of the work. The new church, the plans of which, by Mr. John Howison, were laid before the court, will accommodate about the same number of people as the old one, although the population of the parish has declined in the last ten years from 330 to 230, without the prospect of improving. There will be sittings for about 100 worshippers. The seats will all be open at the end, and all free in the nave, ample provision being made for kneeling,—a point which the Chancellor said did not generally receive sufficient attention from architects. No graves will be interfered with.

Hucknall Torkard.—On the 6th inst. a new church was opened at Hucknall Torkard. A year or two ago the parish church of St. James, famous as the burial-place of Byron, was restored at a cost of several thousand pounds. That building is, however, no longer large enough to meet the spiritual wants of the district, and just sufficient funds have been collected for the erection of a portion of a new church. The old building is at one end of the town, and that which has now been opened is at the opposite end. The building consists merely of a nave. The style of architecture is Early French. Derbyshire, Bath, and Bulwell stone have been used in the construction. There is accommodation for between 200 and 300 people. The cost has been, up to the present, 1,000*l*., and it is hoped that when funds are available the transepts and a choir will be added. The builders' work has been carried out by Mr. Richard Stevenson, of Nottingham, from designs by Mr. Bromley, architect, also of Nottingham. By night the building is illuminated with gas, the fittings for which have been supplied by Mr. Stubbs, also of Nottingham.

Haxby.—It has been decided to rebuild Haxby Church, which has become altogether unsuited for the purposes of worship. The plans for a new edifice to seat 200 persons, and providing for a tower and spire, have been supplied by Mr. J. Demaine, architect, of Micklegate. The works have been let as follows:—Brick and stone work, G. Bailey & Son, Castle Mills Bridge, York; joinering, Mr. William Dennison, Marygate; plumbing and glazing, Mrs. Ann Hodgson, Stonegate; painter, Mr. R. Pearson, Goodramgate. The slating is to be given, also the heating apparatus, together with a stained glass window for the east end.

Irishtown.—The *Tipperary Free Press* understands that Messrs. A. Hammond & Co., Drogheda, have been accepted as contractors for the erection of the campanile at St. Mary's Church, Irishtown. The work will be commenced immediately, and the first stage will be completed in November. The outer work will be finished by October, 1878.

Fulford.—Tenders for the rebuilding of the portions of Fulford Church, Yorkshire, recently destroyed by fire, have been accepted as follows:—Mr. Simpson, of Darlington, for the masonry, joiner-work, and plastering; Messrs. Pycock & Co., Leeds, slating; Mr. Hodgson, York, plumbing and glazing; Mr. Boynton, York, painting; Mr. Taylor, Leeds, carving; and Mr. Forsyth, London, marble pulpit and font.

Ashbourn.—The restoration of the chancel of the parish church of Ashbourn is proceeding satisfactorily. The foundation has been entirely renewed in concrete and bricks laid in cement. All the plaster has been removed, and the warm red tone of the original masonry is revealed. The sedilia have been lowered, and the lancet windows have been carefully preserved. The tracery of the Perpendicular east window has been taken out, but will be replaced. Sir Gilbert Scott has resolved that this shall be a restoration of the existing fabric in a very literal sense. Mr. Clarke is the resident superintendent of the works. Domesday Survey states that Ashbourn possessed "a priest and a church," but hitherto it has been supposed that no traces of the Norman church remained. A short time since, however, several stones carved with ornament characteristic of the Norman period were found on the south wall of the chancel, close to the transept. A considerable number of fragments of encaustic tiles of the thirteenth century have also been discovered, and these are to be reproduced. New oak stalls will be provided, and the steps leading to the communion-table will be of black bird's-eye marble native to the county.

DISSENTING CHURCH BUILDING NEWS.

St. Anne's-on-the-Sea.—The foundation-stone of the first dissenting place of worship at the new town of St. Anne's-on-the-Sea was laid on Easter Monday, by Mr. Jno. Warburton, of Haslingden. The building is intended to serve as a school chapel for some time, and is being erected by the Wesleyan body at a cost of 1,300*l*. It is of brick, with stone dressings, and is placed behind the site intended eventually for the chapel. Messrs. Maxwell & Tuke, the architects for the new town, are also architects for this building.

York.—The new Wesleyan Chapel in Melbourne-terrace, York, has been formally opened. The chapel and school have cost about 8,000*l*. The tower of the former has an altitude of about 100 ft. The style is described as Palladian, the materials used being brick with stone dressings, and the internal arrangement includes galleries, and an elevated recess behind the rostrum,—this recess being for the choir and organ. Altogether there is sitting accommodation for 850 persons, and the schools behind provide room for 450 children. Mr. E. Taylor, of Stonegate, has been the architect.

Bishop Auckland.—A new Congregational church, recently erected at a cost of about 1,570*l*., in Victoria-street, Bishop Auckland, has been opened for public worship.

Westleigh.—On Good Friday the foundation-stone of a new Wesleyan chapel which is being built at the expense of Mr. James Hayes, was laid at Westleigh, near Manchester, by Mrs. Hayes. The chapel will be in the Early English style, from designs prepared by Mr. J. J. Bradshaw, architect, Bolton, and is expected to cost about 5,000*l*., the number of sittings being 620.

Birmingham.—A new church in connexion with the Birmingham Free Christian Society has just been completed in Lower Faseley-street, and was opened for worship on Easter Sunday. The church has been erected by the side of the old chapel and schools, near the end of Lower Faseley-street, and is in the Gothic style, and built of red bricks, with white stone dressings. Its length is 53 ft., its width 33 ft. 6 in., and its average height 26 ft.; and, together with the accommodation afforded by a gallery at the west end of the chapel, about 360 persons may be seated. The architect is Mr. G. Ingall, of Temple-row, and the builder Mr. G. Lidzey, of Deritend.

Wolverhampton.—The memorial stones of a new Wesleyan School Chapel have been laid at Wolverhampton, at the corner of Penn-road and Mander-street. The structure will, when completed, accommodate nearly 400 persons. The builder is Mr. David Evans, and the architect Mr. S. Loxton, of Walsall. The contract for the building is taken at 1,390*l*.

Books Received.

A Digest of the Law of Partnership. By F. POLLOCK. (Stevens & Son.) London, 1877.

THE possibility of every man becoming his own lawyer may be realised in some far-off Utopia, but certainly not in this modern and complicated life of ours. Still there are some branches of law so very closely connected with large and small business transactions, that to get a knowledge of their principles is really to get a better and sounder acquaintance with the fundamental rules which regulate some portion of every-day business life, and this digest of the law of partnership is just the sort of book which it will be well for business men to become acquainted with. There is nothing technical and narrow about it. for in it are stated, in propositions numbered and regulated as clearly as the articles of association of a joint-stock company, the main principles of partnership rules. These rules are such as judges by their decisions have laid down, and they are based on commercial and common-sense principles, or on customs which have now attained the force of law. If a man of business is about to enter into partnership, nothing is more important than that he should understand how his conduct is to be regulated in his intercourse with his fellow-partner and with the world in his position of a partner in a firm. If he gets into trouble of any sort, let him go to a lawyer at once; but he may very likely save himself getting into this trouble at all if he clearly understands the main rules, at any rate, by which his liabilities and corresponding rights are governed. The easiest way of making this fact plain is, by taking from the book itself one or two propositions which touch upon a matter of the most general kind, but the knowledge of which might very well save dissensions, and consequent expense and trouble. Proposition No. 39 runs thus:—"The partnership books must be kept at the place of business of the partnership, or the principal place if there is more than one, and every partner is entitled to have access to them, and to inspect and transcribe the same, or any of them, when he may think proper." But, like many other rules, this may be controlled by any private arrangement into which the partners may agree when they constitute themselves a firm; and in a large number of cases some such arrangement is in existence. Again,—"No. 40. No majority of the partners can expel any partner unless a power to do so has been conferred by express agreement between the partners." In such a case any power of this kind must be exercised with the utmost good faith, and any attempt to take advantage of it for purposes other than the benefit of the firm would very clearly be illegal. These two extracts will show very plainly the value of a book like this; for in barely over a hundred pages, including exceptions and explanations of the actual rules, a man of ordinary intelligence can find out for himself the ordinary principles by which he and his fellow-partners must be guided, whether as between themselves or with outsiders. It shows, too, the real practical value of a system of codification for the use of intelligent laymen and men of business. Such a system is not a panacea for litigiousness; on the contrary, it would probably increase it; but it certainly is an assistance to all classes in many respects. Many of the benefits which its supporters fondly imagine it will create are purely visionary; but a careful and accurate digest such as this "Law of Partnership" clearly has its practical advantages, and may well be studied by men of business. It would be out of place in a publication such as this to enter into elaborate discussions upon the law of partnership; we have contented ourselves here with some remarks upon a law-book which, by its form, appeals directly to laymen, and will be found of considerable use in forming clear ideas in their heads.

VARIORUM.

WE get the following from the last number of the *Live Stock Journal*:—"Our present farms are the result of many generations, during which the state of affairs, and the demands of the market, have varied almost as many times; and the result is a most complicated intermingling of pasture and arable. A re-adjustment to suit the present demand is not immediately possible. Taken on the whole, the aspect of pasture farming is not at present favourable to the increase of stock, irrespective of the risks from disease. It sounds like a paradox, but grass is too valuable to be turned into meat. The rent of meadow-land varies very much; but suppose we put the average at 2*l.* 10*s.* per acre. But an acre of meadow in a fair season will produce a ton and a half of hay, which, if it costs 1*l.* 5*s.* to make, still leaves, at 5*l.* per ton, 6*l.* 5*s.* to the farmer for his rent and living. Of course this is fallacious reckoning, inasmuch as he cannot sell the whole ton and a half, but must put a great deal back in the shape of manure. Still, it proves the great money-value of grass, quite irrespective of stock-producing. Could the owner of meadow-land only mow his ground year after year, keeping no stock at all, except, perhaps, sheep in to tack as the best producers of manure, and he might still make a large profit of hay alone. He is restrained, because perpetual mowing without stock-keeping would exhaust the land. If he could find a grass that he could mow annually without exhaustion, and had the courage to defy custom in not keeping stock, he might still receive a handsome return, so strong is the demand for hay. Turn it whatever way one will, it seems clear that the pasture farmer's personal interest is not wholly wrapped up in the rearing of stock."

Miscellanea.

Rubens as a Diplomatist.—At a recent sitting of the Royal Academy of Belgium, M. Gachard, Archivisit-General of the Kingdom, read a paper on the diplomatic mission of Rubens to London, and in which the writer retraced the events which passed between the month of August, 1629, and the 6th of March, 1630, the day on which Rubens left the capital of Great Britain to return to Holland. The negotiations of the painter diplomatist were crowned with success, as they had for result the sending of an Ambassador from England to Madrid to negotiate peace with the Spanish Cabinet, and the arrival of an Envoy from Madrid in London with the same object. M. Gachard read several despatches from Rubens, which seem to show that the great artist had a real aptitude for State affairs. He mentioned the distinction conferred on the Ambassador from Philip IV. by the University of Cambridge, which made him *magister artium*. He described how on the 3rd of March, 1630, Rubens received the order of knighthood from Charles I., who added to the favour the gift of the sword he had used in the ceremony, with a diamond ring from his own finger, a gold chain, and the ribands from his hat, and who afterwards gave him arms borrowed from his own escutcheon.

Church Building at Bolton.—The Rev. T. T. Berger, vicar of St. James's, Bolton, in a recent address on "Church Property," said that since he had been in Bolton there had been raised something like 100,000*l.* at the very least during the last sixteen years. Mr. Peter Ormerod built the parish church at an expense of about 45,000*l.*; St. Paul's, Deansgate, cost about 7,000*l.*; his own church (St. James's), cost 6,000*l.*; St. Matthew's cost 10,000*l.*; and St. John's, 8,000*l.* All Saints' Church had been rebuilt, the Emmanuel Church was built just before he came to Bolton, and St. Thomas's Church had been built in Halliwell near his own church. Of that 100,000*l.* how much had Government contributed? Not a farthing, and not a farthing had come out of the taxes. The late Mr. Nathaniel Greenhalgh, who had resided just outside his (Mr. Berger's) parish, and had passed through that rapidly-increasing place almost every day, had by his will left the sum of 40,000*l.* for the building of two new churches—one in St. James's parish and another in the Emmanuel parish. He had chosen his brother Thomas to see that the work was carried out. That was a specimen, and that was the way in which a great majority of the churches had been built.

Exhibitions and Dinners.—The Society of Painters in Water Colours, and the Institute of Painters in Water Colours, will both give their private view on this Saturday, the 21st inst. The private view at the Royal Academy will take place on Friday, the 4th of May. The dinner in aid of the Artists' Benevolent Fund is fixed to take place on this Saturday, the 21st inst. The Newspaper Press Fund Dinner, on the 5th of May; the Literary Fund dinner on the 9th of May; and the dinner for the Artists' General Benevolent Fund on the 12th of May.

New Gateway at Langton, Dunse, N.B.—A fine gateway has just been erected by the Lady Elizabeth Pringle, at the principal approach to Langton House, about a mile and a half to the west of Dunse, from a design by Messrs. D. & J. Bryce, architects, Edinburgh. The structure is in the Elizabethan style, and corresponds with the mansion erected at Langton some years ago by her ladyship's brother, the late Marquis of Breadalbane. The gateway faces the turnpike road, with a frontage of 100 feet. The principal gate—12 ft. 6 in. in width, and (including ornamental top) 22 ft. in height—is hung on massive ashlar pillars, 4 ft. 10 in. square and 16 ft. in height, surmounted by a scroll finial, which adds other 8 ft. to their height. The gates were supplied by Messrs. Sinclair, Leith, at a cost of nearly 500*l.* The large gate weighs about 2½ tons. In the centre of each leaf of this gate, Lady Elizabeth Pringle's initials, in monogram, are neatly interwoven, while the design above the gate is filled in with a conspicuous figure of the Breadalbane arms. The mason work has been executed by Messrs. Waddell & Cowper, Gavinton. The total cost will exceed 3,000*l.*

North Staffordshire Brick and Tile Manufacturers' Association.—The annual meeting and dinner of this association took place on the 3rd inst. at Stoke. At the meeting it was decided to make no alteration in prices. Mr. J. Timmis presided at the dinner, and in proposing "Success to the Brick and Tile Trade," expressed a hope that it would be as prosperous in the ensuing year as it had been during the past twelve months. He urged the importance of endeavouring to improve the quality of their goods, so that they need fear no competition, observing that the markets for their productions were extending in every direction. Mr. W. Brough, of Silverdale, whose name was coupled with the toast, responded, remarking that it rested with the individual members of the Association whether the trade was to continue to flourish. They had now a list of quoted prices to go by, which all the members of the Association were pledged to carry out. Referring to the increase in the number of merchants, he said they tried to persuade the members of the trade that they did not know how to make a blue brick. In dealing with merchants, they must remember that while they (the merchants) had only to deal with figures, the brick and tile makers had to deal with labour, material, and other matters.

Scarcity of House Accommodation in the North.—The Huntly correspondent of a Scotch paper says:—At no former time have houses for workpeople been in such great demand as at present. Whether from increase of the population, or the greater extent of accommodation required in consequence of better remuneration for labour, the supply is now found to be unequal to the demand, and unless there be an opening found elsewhere, this will be felt to a greater extent every succeeding year, as many of the present houses are becoming uninhabitable through age. The present rents are altogether inadequate to yield anything like a fair return for the outlay now required for building.

Temple Bar.—Mr. E. P. Spiller, of Furnival's Inn, writes to the *City Press* that if Temple Bar were presented to the Benchers of the Inner Temple, they might be induced to assist the Corporation to complete the undertaking. "If it were placed at the entrance of Mitre-court it would form a grand entrance to the Temple and present a splendid vista from Fleet-street. Only two houses in Fleet-street, with part of the Mitre Tavern at the back, and an enlarged opening at the end of the court, would be required to complete this desirable object. To mark the City boundary at Temple Bar two bronze statues might be placed,—one of Sir W. Walworth, and the other of Sir R. Whittington."

New Temperance Hall, Middlesbrough.—The New Temperance Hall in Gilkes-street, Middlesbrough, has been formally opened. The foundation stone of the new building was laid on Easter Monday, 1874. The cost is between 5,000*l.* and 6,000*l.* The hall is erected in the Italian style, and covers half an acre of land. It is built of common brick, with moulded stone dressings and cornices. The principal entrance is in Gilkes-street. The hall is calculated to seat upwards of 2,000 people comfortably. The architect was Mr. Councillor J. Hunter; the contractor for the whole of the work being Mr. Councillor J. Lord.

The "Pioneer Railway."—At a meeting of the Society of Arts, on the 4th inst., a paper was read by Mr. F. J. Rowan "On the Pioneer Railway, or Steam Caravan, for Undeveloped and Difficult Countries." That railway, Mr. Rowan explained, consists of a low fence or continuous girder, constructed of wood or iron, as desired, supported on edge upon posts or pillars, and surmounted by a single rail (not a single line of rails), the engine, carriages, and wagons running on this rail, and sitting astride of the fence after the fashion of the panniers or the packs on a camel or mule. The entire line and its plant can be constructed either at home or abroad, and when constructed the line or railway may be worked at considerable speed; and as any incline up to 1 in 10 is possible in consequence of the method of driving adopted, no expensive surveys are required, nor levels, except of the most simple kind. It is calculated that a line on this principle can be constructed at a cost of 1,500*l.* per mile. The working expenses of such a system will be light. The trains would stop anywhere to take up and set down goods, so that no station or porters would be required, as the railway runs on elevated posts down the main street of the town or village, and the principal *café* of the place would serve very well for a ticket office. The moderate speed intended for pioneer trains,—ten to twenty miles an hour,—coupled with their light weight and almost unlimited brake power, renders it quite possible safely to dispense with the paraphernalia and cost of signals.

The "Stowe System" of Wood Paving.—This method of laying wood paving, which hails from America, is, we learn, being tried in St. Pancras. The blocks are laid vertically, and care is taken to prevent, as much as possible, the filtration of surface water; but the main stability and preservation of the pavement depends on the strata on which it rests. The ordinary roadway having been excavated to the required depth, and properly "made," is covered completely with a bed of clean, sharp sand, 6 in. deep, and upon this are laid a series of rows of wooden blocks or cubes on end across the street. Between each row of these wooden blocks or cubes, wedges 1 in. in thickness are driven perpendicularly, and when a sufficient number of these blocks and wedges are laid to hold the sand firmly, the latter are driven below the surface of the roadway to the depth of 3 in. or 4 in. below the bottom of the level of the blocks into the bed of sand. The effect of this wedging is said to be to compress the sand to something nearly approaching the hardness of sandstone, without destroying in any material degree its elasticity or power of absorption, and to fix the wooden blocks or cubes much more firmly than they can be fixed by any other process.

"Tachymetry": a Royal Road to Geometry.—According to the *Globe*, M. Christophle, the French Minister of Public Works, has addressed a circular to the chief engineers of each department, as heads of the administration of "*ponts et chaussées*," recommending to their notice an invention lately made by a M. Lagout. The device has been christened by its inventor as "Tachymetry," and by means of it, to use the words of the Minister, "any one in the world may at once obtain the cube of a solid substance as quickly as by any of the processes hitherto employed." This is not, perhaps, a very lucid description, but the upshot of the whole matter is that, after having considered the invention and read the report of the commission which has inquired into it, M. Christophle has convinced himself of its practical merits, and concludes that it "may be very useful in making rapidly acquainted with certain rules of geometry the agents who have made no study of the subject." It is proposed, therefore, that all the inferior agents of the French "roads and bridges" shall at once be initiated by the chief engineer and his colleagues into the mysteries of "tachymetry."

To Detect Gas-escapes plumbers are in the habit of applying the flame of a lamp or candle to the suspected place of leakage. The following, if they keep the materials at hand, will be found a safer method:—Mix dark soap and water in the proportion of two pounds of the former to six or seven pints of the latter. The sticky liquid so obtained may be applied with a brush to the gas-pipe, when, if an escape is taking place, bubbles will readily be seen on the liquid, and the position of the escape determined without danger.

Demolition of Houses.—The agent for the contractors engaged in the demolition of Church-lane, St. Giles's, has applied to Mr. Vaughan for assistance to prevent their labourers being impeded and molested in the execution of the work. The street has long been one of the lowest dens of infamy in London, and the houses had been condemned by the Board of Works as unfit for human habitation. The usual notice was given to the residents, chiefly Irish, to quit their lodgings; but they refused to go, complaining that the notice was insufficient. Some of the latter were present, and said that the cisterns and back walls had been pulled down, and they were without water. Mr. Vaughan said that the facilities now afforded by penny trains were so great that people industriously disposed could get much cheaper and better lodgings, and purer air, by going a little way out of town; but he hoped that the contractors would extend the time of notice another week, so as to avoid any appearance of harshness in dealing with these poor people. After that time the workmen must be protected from molestation.

Draining the Zuyder Zee.—Preparations are going on for the commencement of the long-projected work of draining the Zuyder Zee. A dam, 40 kilomètres (24 miles 1,504 yards) long, and 50 mètres broad at its base, is to be carried across the gulf, built up to a height of half a mètre above the ordinary level of high tide. Upon this, pumping machines of 10,000 horse-power will be erected, capable of pumping up from the enclosed sea, and discharging on the outside of the dam 6,500,000 cubic mètres of water daily. Taking the average depth of the water at four mètres and a half, it is estimated that the work of pumping will be completed in about sixteen years from its commencement. The total cost of reclamation is set down at 335,000,000 francs, but, huge as this sum is, the undertaking is confidently looked upon as likely to prove a most remunerative speculation. The success of the scheme will add to the kingdom a new province, 195,300 hectares, or nearly 500,000 acres in extent.

The Shakespeare Memorial Theatre, Stratford-upon-Avon.—Some slight alterations have been made in the programme for the ceremony of laying the corner-stone of the projected Memorial Theatre on Monday next. The Mayor (Mr. J. J. Nason) will receive the Corporation and governors at the Town-hall at one o'clock. The P.G. Lodge will be opened by the R.W.P.G.M. at the Town-hall at that hour, and not at the Corn Exchange as originally arranged. The procession will be marshalled outside the Town-hall at a quarter to two, and proceed via Chapel and Church streets, Old Town, and Southern's-lane, to the site of the proposed building. There the ceremony of laying a corner-stone will be performed, with the ritual of the Masonic craft, after which the procession will be re-formed and proceed along the water-side, Bridge-street, High-street, to New-place, where a luncheon will be laid out in a marquee for 750 persons. We have already given a view of the theatre in the *Builder*.

Our Canal Population.—In the House of Commons, in answer to Mr. Price, who asked whether it was true that at an inquest held at Runcorn, on the body of a child that met its death on board a canal-boat, the mother stated in evidence "that herself, her husband, and three children slept in the same cabin, which was only 3½ ft. wide by 5 ft. high," Mr. Cross said it was true that an inquest was held, and that the jury returned a verdict that the child was found dead in bed, there being no evidence to show that the mother had overlaid it. He believed that the matters stated at the end of the question were substantially true, though he could not speak positively as to the dimensions of the cabin. He wished to take that opportunity to state that he had already drawn up a Bill, which, he hoped, would meet the case of children habitually going about in canal-boats, and at the first convenient opportunity he would ask leave to bring it in.

Russia.—The interest taken at the present time in all that concerns Russia, her resources, and her people, has contributed to a large extent to increase the demand for Mr. Mackenzie Wallace's "Russia" (a capital book), of which, we understand, a fifth edition will be ready in a few days. Mr. Mudie has placed 1,000 copies in circulation, to satisfy the requirements of his readers, and, from all we hear, Col. James Baker's new work on Turkey is likely to excite a still larger amount of curiosity and interest.

The Carpenters and Joiners of Manchester and Salford.—The dispute between the carpenters and joiners of Manchester, Salford, and the district, is still pending; but it is believed that, before the 1st of May it will have been amicably settled. The men, nearly six months ago, asked the employers to grant them an increase of wages from 8½d. to 10d. per hour, to reduce their hours of labour half an hour per day, and to make them a concession with regard to the time allowed for walking to places of employment outside the city. The last-mentioned demand has already been abandoned, and there is every probability that the other applications will be somewhat modified by the men. The employers have offered to give an increase of ½d. per hour on the present wages; but, as this concession of itself is not likely to satisfy the workmen, it is considered probable that efforts will be made to secure a larger advance. In the event of a strike occurring, about 4,000 men will be thrown out of work.

Royal Italian Opera.—It was difficult to believe that Mdlle. Smeroschi had undertaken the part of *Norina* in "Don Pasquale," on Thursday evening last, at a very short notice, in consequence of the indisposition of Mdlle. Marimon, who was announced to sing. On the contrary, Mdlle. Smeroschi would appear to have played the part all her life, so perfectly at home was she as the sprightly heroine of this charming opera. Indeed, all who took part in it seemed to be actuated by the same motive, and the result was altogether satisfying. M. Capoul was heard to advantage, and his singing of the well-known serenade secured him a deserved encore. Of Signori Ciampi and Cotogni, it is only necessary to say they were as usual excellent. There have been some admirable performances at Mr. Gye's theatre since the opening.

Strike at Portsmouth.—The men employed in the erection of the new lunatic asylum at Portsmouth have struck. The Mayor, at a recent meeting of the Town Council, stated that the matter was of considerable importance, as the interest on the loan for the erection of the building amounted to between 60*l.* and 70*l.* a week. He did not mind expressing himself very strongly on the subject. These men were employed all through the winter, when they scarcely earned their money, and now that they had an opportunity of doing good to the contractor they turned round upon him. He did not think it was a manly act on the part of any trade union to behave to a contractor in that way. It was intimated that the contractor had expressed his intention of taking advantage of the "strike" clause in the contract.

The Guildhall, London.—A stained-glass window,—the gift of Mr. Alderman Cotton, M.P., the late Lord Mayor—has been placed in the Guildhall. It consists of four divisions, the upper two of which depict the presentation of an address to the Prince of Wales by the Lord Mayor and Sheriffs last year, congratulating him on his safe return from his Indian tour; and the lower two illustrating the presentation of the loving cup by the Lord Mayor to the Princess of Wales in the course of the banquet given in the Guildhall on that occasion. The openings are surmounted with canopies, consisting of emblematical designs in ornamental ribbon-work. The window, which was designed and executed by Mr. Wm. Ramsay, of Farringdon-street, replaces one presented in 1873 by the same Alderman.

M. Madou.—M. J. B. Madou, a well-known Belgian artist, died on the 3rd inst., at the age of 81. M. Madou was president of the Belgian Water-Colour Society, and only a few days before his death attended the opening of their annual exhibition in the Ducal Palace, Brussels. The King and Queen of the Belgians were present, and scarcely had M. Madou received their Majesties with a few words of welcome, when he staggered and fell insensibly into the arms of those near him. He had been, it appears, attacked by congestion of the brain, which has since proved fatal. He prosecuted his first studies under Célestin François, and devoted himself chiefly to genre painting. M. Madou was a member of the Belgian Academy, Associate of the Antwerp Academy, and Professor of the Brussels School of Fine Arts.

The Warwick Borough Surveyorship.—Mr. Broughton, formerly assistant under Mr. Prichard, C.E., has been appointed borough surveyor in the place of Mr. G. Lewis, resigned. The salary is 150*l.* per annum, with residence, and there were fifty applicants.

The White House, Washington.—An American paper says:—"A good many people are puzzled when asked the reason why the President's residence at Washington is called the 'White House.' The origin of the name is as follows:—'When the British, in 1814, took Washington, they destroyed the public buildings, including the President's mansion, which, like the capitol, was built of grayish sand-stone. The burning of the woodwork smoked and discoloured the stone walls, the natural appearance of which could not be restored. Uniformity was secured by the application of white paint. The changed appearance from gray to white attracted attention, and gave it the appellation of the "White House," which it has since borne.'"

The Clergy and Trade Unions.—The committee of clergymen who convened the two conferences lately held in London between representatives of the Church and of Trade Unions have issued a report. They cannot attribute any very definite results to those conferences, but have hope of very real benefit if they are wisely followed up. The points upon which the committee feel discussion is needed are:—"The justification and the limits of coercion; the alleged tendency of unions to restrain the better workman for the benefit of the worse; and the action of increased wages on the price of commodities, and the consequent partial neutralisation of one chief good effect claimed for the unions."

The Convalescent Home.—An Amateur Dramatic Performance, for the benefit of the Convalescent Home in connexion with King's College Hospital, will take place at Bridgwater House, on Monday evening, May 14th, when Mr. H. J. Byron's comedy of "Cyril's Success," to be followed by a Comedietta, will be represented, supported by many distinguished amateurs. Tickets, one guinea each, may be obtained, by letter, from Mrs. William Playfair, 31, George-street, Hanover-square, who acts as hon. secretary and treasurer, and acts well. The performance will take place in the Picture Gallery.

What Roof?—The *Windsor and Eton Express*, in describing some "town improvements" at Marlow, says,—"The dilapidated edifice by the river side, interesting for its antiquity and its association with the customs and opinions of remote ages, is to be removed, to make way, in all probability, for several pretty waterside villa residences, and a long-called-for improvement in the Thames from that side. The valuable roof of chesnut-wood has been promised by Colonel Williams to the Rev. T. E. Powell, to form the roof, or a portion thereof, of the new aisle which is about to be added to Bisham Church."

The Water Supply of London.—It is announced, on the authority of Dr. Lyon Playfair and Sir Henry Peek, that on Saturday last Messrs. Meux & Co., who have been engaged for some time in sinking a well at their brewery in the Tottenham-court-road, struck the green sand at the depth of 1,001 ft., and obtained water. Sinking 3 ft. more, an ample supply was obtained for their own purposes, and the engineers believe, contrary to the opinion which has hitherto been expressed by geologists, that in the green sand there is an ample supply for the whole of the wants of London.

Proposed Fine Art Exhibition at Derby. It is intended to hold a Fine Art Exhibition in the new School of Art at Derby, in June next. The principal wing of the building is nearly completed. The Duke of Devonshire has consented to undertake the office of president. Loans have been already offered by the Marquis of Hartington, Mr. Beresford Wright, Mr. Godfrey Meynell, Mr. Henry Evans, Mr. C. E. Newton, and other possessors of art-treasures. These will be in addition to the loan which the Government will furnish from the national treasures of the South Kensington Museum.

National Health Society.—A deputation from this Society will wait on the School Board on the 30th of May, to bring before their notice the desirability of opening the playgrounds attached to the Board Schools (comprising 57 acres of open space) on the half holidays and the summer evenings, when they are usually closed.

Bells at Kelvedon.—On Easter Day the parishioners of Kelvedon were awakened in the early morn by the sweet chimes of the church bells, which have just been rehung and retuned by Messrs. Mears & Stainbank, of Whitechapel.

New Chancel, Roman Catholic Church, Birkenhead.—A new chancel to the Church of our Lady has been opened by the Roman Catholic Bishop of Shrewsbury. It is semi-octagonal in plan, and has side chapels; the ceiling is wagon-shaped and panelled, and has clearstory windows (the centre one of stained glass). The three lights in each window are divided by red Mansfield stone columns, with carved caps, the mouldings terminating in carved bosses. The principals of the roof rest on four richly-foliated caps, emblematic of the seasons, having in the same line a carved string-course running round the whole of the chancel. The shafts under these caps rest again on four sculptured corbels, emblematic of the Evangelists, which are also united by a carved string-course. Between the shafts each wall is divided into four niches, all of them being surmounted by elaborately-moulded crocketed and carved canopies, which rest on red marble columns with carved caps. At the junction of the canopies are sculptured twelve angels, some adoring and some with ancient musical instruments, while foliated corbels join the walls. The arches dividing the side chapels are richly moulded, and terminate on carved corbels emblematic of the Sacrament, the Communion, self-sacrifice, passion, &c. Outside the tower a figure of our Lady is placed in a niche on a carved pedestal, and is surmounted by an elaborate canopy. The exterior is of Runcorn stone, while white Stourton stone is used inside. Messrs. Pugin are the architects, Mr. Wooley is the builder, and the carving has been executed by Mr. Maurice Geflowski.

Russian Archæology.—The *Athenæum* says that it is proposed to found a society in Russia for the protection of *kurgans*. These *kurgans* are the tumuli which are dotted over the face of the country, generally covering the remains of some man of note among the ancient inhabitants. The greater part of them are private property, and they are now liable to be demolished, or at least to be neglected. The proposal will be brought to the notice of the Archæological Congress, which is to be held at Kazan.

Proposed English Church at Neuilly.—Miss Ada M. Leigh, hon. secretary to the Mission Home at Paris, states that the number of British residents in the neighbourhood of the proposed church at Neuilly is 646, exclusive of the English pupils in French schools. Miss Leigh also mentions that Sir R. Wallace intends to build his new British hospital in this locality, which will doubtless increase the number of the English population whom it is intended to benefit.

The Proposed Indian and Colonial Museum.—The project to erect on the Embankment a joint Indian and Colonial Museum, which has been recently advocated, may, the *Daily News* has reason to believe, be regarded as dead, so far at least as the co-operation of the Indian Government is concerned.

English Art Academy in Rome.—A proposition for the establishment of an English Art Academy in Rome appears to have been taken up seriously. Such an institution there is greatly to be desired. The French Academy at the Villa Medici is well known.

The Victoria (Philosophical) Institute held a meeting at 10, Adelphi-terrace, on Monday evening, the Rev. Dr. R. Thornton in the chair, when a paper "On recent Assyrian Research, and the light it threw on Civilisation at the Time of Abraham," was read.

Kensington Vestry-hall Competition.—We have visited the designs which have been submitted and are now suspended in the Old National School Building, High-street, Kensington, but must defer our notice till next week.

Slaters' Wages at Brechin.—The journeymen slaters of Brechin have just got an advance of their wages to 7½d. per hour. It was unsolicited.

TENDERS

For a factory in Great New-street and West Harding-street. Messrs. Ford & Hesketh, architects:—

Colls & Sons	£4,645	0	0
Adamson & Sons	4,610	0	0
Laurence	4,593	0	0
Scrivener & White	4,598	0	0
Ashby, Brothers	4,562	0	0
Kirk & Randall	4,563	0	0
Browne & Robinson	4,513	0	0
Morter	4,504	0	0
Brass	4,408	0	0

For the erection of two new villa residences, Lordship-lane, Dulwich, for Mr. Charles Smith. Mr. James Dudley, architect:—

Ward & Son	£1,900	0	0
Tyerman	1,898	0	0
Colebrooke	1,760	0	0
Gillett	1,648	0	0

For the erection of a billiard-room at the King's Head, Holloway, for Mr. F. F. Anstiss. Mr. John Heath, architect:—

Channings	£445	0	0
Lamble	427	0	0
Davies	345	0	0
Vears & Co. (accepted)	325	0	0

For rebuilding the Wagon and Horses public house and stabling at Surbiton for Messrs. Young & Bainbridge. Mr. Keith D. Young, architect. Quantities by Mr. M. H. Young:—

Timberley	£2,834	0	0
Nightingale	2,679	0	0
Mudie	2,455	0	0
Parsons	2,369	0	0
Mason	2,294	0	0

For repairs at Nos. 6 and 7, Lincoln-terrace, Willesden-lane, Kilburn, for Mr. H. Stanley Smith, 8, Staple-inn. Mr. W. F. Potter, architect:—

Simpson & Annett	£275	0	0
Hayworth	260	8	6
Kerry (accepted)	260	0	0

For new business premises, High-street, Bedford, for Mr. H. H. Herring. Mr. F. T. Mercer, architect. Quantities by the architect:—

Foster	£4,768	0	0
Potter	4,680	0	0
Litchfield	4,620	0	0
Corby	4,468	0	0
Day	4,458	10	0
Lilly	4,411	12	0
Knight & Boston	4,376	0	0
Spencer	4,070	0	0

For laying new drain, making certain alterations, and erecting new class-rooms, &c., for the St. Paul's Brunswick Sunday Schools, Bristol. Messrs. J. W. Trew & Sons, architects:—

Pitt	£2,391	0	0
Box	2,330	0	0
Kingstone	2,200	0	0
Neale	2,164	0	0
Stevens & Gardiner	2,113	0	0
Gorvett, Brothers	1,943	0	0
Wilkins & Hill	1,880	0	0
Pugsley	1,880	0	0
Clarke	1,875	0	0
Summerville	1,800	0	0
Hill & Prior	1,660	0	0

For alterations, additions, and repairs (including repairs to the external cement work) to the Farnham, Alton, and Hartley Wintney District Schools, for the governors. Mr. T. Wonnacott, architect. Quantities supplied by Mr. W. H. Brayshaw:—

Garland (accepted)	£2,307	0	0

For alterations and repairs at the Dundee Arms, Charles Street, Horselydown, for Mr. G. Freeman:—

Rugg	£245	0	0
Austin	198	10	0
Shadbolt (accepted)	187	10	0

For additions and alterations to No. 77, Addison-road, for Mr. John Leeming. Messrs. Goldie & Child, architects. Quantities supplied by Mr. W. H. Brayshaw:—

Lucas	£2,697	0	0
Roberts	2,647	0	0
Conder	2,629	0	0
Macey	2,620	0	0
Durant & Nash (accepted)	2,560	0	0

For building the new City Lunatic Asylum at Norwich, exclusive of foundations, already laid. Mr. R. M. Phipson, architect. Quantities by Messrs. Widnell & Trollope:—

Hawes	£49,000	0	0
Andrews	45,250	0	0
Girling	44,638	0	0
Lacey	44,250	0	0
Youngs	43,850	0	0
Everett & Son	42,900	0	0
Downing	42,893	0	0
Cornish & Gaymer (accepted)	41,719	0	0

For rebuilding premises on the Broad Quay, Bristol, for Mr. E. Handley, of Birmingham. Mr. W. H. Clark, architect:—

Box	£625	0	0
Pugsley	584	0	0
Davis	580	0	0
Walters & Crick	571	0	0
Crocker	547	0	0
Stevens & Gardiner	483	0	0
Beaven & Sons (accepted)	455	0	0
Forse & Ashley	445	0	0

For the erection of a chapel and vestry at Downend, near Bristol:—

Pugsley	£2,035	0	0
Crocker	1,822	0	0
Beaven & Sons (accepted)	1,717	0	0
Walters & Crick	1,602	0	0

For works to the Prince Albert, St. Martin's-lane, for Messrs. Watney:—

Boden	£138	0	0
Godden	138	0	0
Taylor	139	0	0
Grimwood & Sons	129	0	0
Shurmur (too late)	117	0	0

For completing dwelling-house at Woodford, for Mr. Vookham:—

Steel, Brothers (accepted).

For alterations and repairs at the Monmyer Arms, Provost-street, City-road, for Mr. Wood. Mr. H. R. Cotton, architect:—

Toms	£445	0	0
Anley (accepted)	435	0	0

For alterations at the Red Lion, Church-street, Stoke Newington. Mr. W. E. Williams, architect:—

Marr	£412	0	0
Eaton	399	0	0
Anley (accepted)	330	0	0

Bar Fittings.

Anley	130	0	0

For building a billiard-room at the Eight Bells, Ironmonger-row, St. Luke's. Mr. W. E. Williams, architect:—

Eaton	£290	0	0
Anley (accepted)	280	0	0

For building stabling in Sandal Mews, Camden-road, for Dr. Popham. Mr. Earley Hollis, architect. Quantities supplied by Mr. Boxall:—

Batchelder	£2,753	0	0
Brook	2,333	0	0
Cashmere	2,327	0	0
Lamble	2,325	0	0
Elkington	2,316	0	0

For repairs at the Black Horse, York-street, Westminster, for Messrs. Watney & Co. Mr. H. J. Newton, architect:—

Hockley	£208	0	0
Godden	250	0	0
Shurmur	239	0	0
Taylor	227	0	0
Lamble (accepted)	209	0	0

For re-building the Orange Tree Public House, Isleworth, for Messrs. Fuller, Smith, & Turner. Mr. W. Nunn, architect:—

Henning & Son	£1,955	0	0
Adamson	1,948	0	0
Hiscop	1,720	0	0
Chamberlain	1,678	0	0
Nye	1,630	0	0
Lamble (accepted)	1,525	0	0

For sinking well and fixing pump, &c., on Hampton Court Green, for Messrs. Fuller, Smith, & Turner:—

Lamble	£133	0	0
Henning & Son	127	0	0

For alterations and repairs to the Balmoral Castle, Caledonian-road, for Mr. R. Howland. Messrs. Bird & Walters, architects. Quantities supplied:—

Hockley	£2,026	0	0
Nightingale	1,915	0	0
Lawrence	1,883	0	0
Brown	1,827	0	0
Kelly, Brothers	1,820	0	0
Williams & Sons	1,780	0	0
Anley (accepted)	1,770	0	0
Outhwaite & Sons (withdrawn)	1,394	0	0

Warehouse, Great Eastern-street.—The architect for this building (tenders for the erection of which we published last week) is Mr. W. A., *not* F. W., Longmore. The quantities were supplied by Mr. W. B. Catherwood.

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We are compelled to decline pointing out books and giving addresses.

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CITY of WINCHESTER.—The Town Council are about to appoint a SURVEYOR and INSPECTOR of NUISANCES, to enter upon his duties forthwith. He will be required to devote his whole time and attention to the discharge of the duties of his office, but will be allowed to take private pupils. He must be well acquainted with the making and management of roads, streets, and pavements, the taking of levels, the value of labour and materials, the construction and ventilation of sewers, and their connexion with house drainage, the preparation of plans, specifications, and estimates, the mode of the construction and erections of buildings, and the general duties of a Borough Surveyor and Inspector of Nuisances. He will be required to give security in the sum of 150*l.* The salary will be 200*l.* a year (payable quarterly), with an office and stationery. There is also an Assistant Surveyor. Candidates must be between the ages of thirty and forty-five. Testimonials from past and present employers only will be considered. Applicants must forward their testimonials to me on or before the 1st of MAY next, accompanied by a letter in their own handwriting, stating their age and the present or latest employment, and containing the name and address of the proposed Surety. The Council do not pledge themselves to make any appointment.
WALTER BAILEY, Town Clerk.
Guildhall, Winchester, April 10th, 1877.

SURVEYOR for the CITY of DURHAM. WANTED, by the Corporation and Urban Sanitary Authority of the City of Durham, a competent person to fill the office of SURVEYOR. Salary, 175*l.* per annum, with an office provided by the Board, and an allowance of 5*l.* for gas, water, and fuel. Applications, stating age, qualifications, and testimonials, to be sent to the Town Clerk's Office, Durham, marked "Application for Office of Surveyor," on or before SATURDAY, the 28th day of APRIL, 1877.
WILLIAM MARSHALL, Town Clerk.
Durham, April 11, 1877.

DRAUGHTSMAN (Architectural) Wanted. Must be thoroughly competent.—Address, with terms, references, and specimens, if convenient, to J. J. BRADSHAW, Architect, No. 18, Nelson-square, Bolton.

QUANTITY SURVEYOR'S ASSISTANT WANTED. Must be well qualified in Abstracting, Billing and Writing Specifications, &c.—Address, stating references and terms, Box 147, Office of "The Builder."

ASSISTANT (Architect's) WANTED in the Country.—Address, stating terms and particulars, to Y. Z. "Advertiser" Office, Oswestry.

JUNIOR ASSISTANT WANTED, in an Architect and Land Surveyor's Office.—Apply, personally, to O'DONOGHUE & BROWN, 62, George-street, Portman-square.

BUILDER'S CLERK WANTED, for a permanency. Must be thoroughly competent, and a good bookkeeper.—Address, stating experience and salary required, to THOMAS HUNT, Builder, Ware.

OFFICE CLERK, with good character and references, WANTED, to Take Charge of Correspondence and Papers Department, to take shorthand notes and write letters therefrom, quickly, accurately, and well. Knowledge of plain drawing and tracing, and the iron trade, an advantage, but not indispensable.—Address, stating references, experience, not omitting salary, C. care of Mr. Woods, 1, Great Queen-street, Westminster, S.W.

CLERK WANTED in a Builder's Office.—Address, stating age, references, and salary required, to Box 115, Office of "The Builder."

CLERK (efficient), WANTED by a Builder in the country.—Address, stating terms, references, &c. W. S. S care of Mr. Morris, Stationer, Bourne, Lincolnshire.

CLERK (Architect and Surveyor's) Wanted, efficient at quantities, specifications, and practical work.—Address, stating age, experience, and salary required, X. care of Mr. Bumpus, 5, Holborn, E.C.

CLERK of WORKS WANTED for the Country. A carpenter by trade preferred.—Address, with references and terms, to Messrs. WHITMORE & KENNARD, Surveyors, 14, Devonshire-square, Bishopsgate, E.C.

CLERK of the WORKS WANTED, to superintend the restoration and partial rebuilding of Yarlington Church, Somersetshire.
None but those who can produce first-class testimonials and have had considerable experience, especially in masonry, need apply.
Address, stating age and terms, to the Architect, J. ARTHUR REEVE, 7, Drayton-terrace, South Kensington, S.W.

CLERK of WORKS.—WANTED, a Person competent to SUPERINTEND the Erection of the New Infirmary at the Earlswood Asylum, and who understands practically Engineering in all its details. He will also be required Permanently to take the oversight of all the workshops and workpeople throughout the building, as well as all the machinery and engineering, and smith's work, and general repairs. Salary 2l. 10s. per week.—Particulars of duties may be obtained of the Secretary, 30, King William-street, London Bridge, E.C.

YOUTH WANTED, in a Builder's Office, in London. Must be intelligent, quick at figures, and write a good hand.—Address, in own handwriting, stating age and salary required, Box 143, Office of "The Builder."

MASON'S FOREMAN.—WANTED, an active and pushing Man, as WORKING FOREMAN of MASONS. One possessing a thorough knowledge of his trade, and competent to set out work and manage men. Must be sober, trustworthy, and industrious.—Address, stating qualification, recent engagements, and wages expected, to CHARLES CLARIDGE, Contractor, Banbury. N.B.—Testimonials not necessary.

BUILDER'S YARD FOREMAN Wanted. No one need apply unless he thoroughly understands the duties. Must be energetic, honest, and sober. State references, where last employed, age, salary required.—Box 145, Office of "The Builder."

SHOP FOREMAN of JOINERS.—Wanted, in the near neighbourhood of London, an experienced, accurate, and energetic man as above. Must be accustomed to working with machinery, and capable of managing from fifty to seventy joiners.—Address, giving references, and stating salary required, Box 127, Office of "The Builder."

BRICKLAYER'S FOREMAN.—Wanted, an energetic Man as WORKING FOREMAN of BRICKLAYERS. Must have a practical knowledge of his trade, and be sober, reliable, active, and industrious.—Address, stating qualification, recent engagements, and wages expected, CHARLES CLARIDGE, Contractor, Banbury. N.B.—Testimonials unnecessary.

GRAINER and WRITER WANTED, a good Workman. — Address, stating wages, to SMITH BROTHERS, Northampton. To a steady and good Workman this situation would be permanent.

HOUSE PAINTERS WANTED; also a good Shop Colour Man, capable of Taking Charge of General Stores.—Apply to JOHN A. HUNT, Decorator, Hoddesdon, Herts.

SLATE MASON WANTED, used to sanitary work.—Apply to Messrs. J. G. SHIDDERT & CO. Sanitary Engineers, 50, Southwark Bridge-road, S.E.

TILE FIXERS (good) WANTED. Several thousand yards of plain and encaustic to fix.—Address, J. P. T. Albert-buildings, Queen Victoria-street, City, London.

MACHINIST. — WANTED, an active young Man, accustomed to working a Panel Planing Machine.—SAGE'S Factory, Portpool-lane, Gray's-inn-road, London.

MACHINIST.—WANTED, a thoroughly competent Man to Work (Steam) Wood-Working Machinery. None need apply whose character will not bear the strictest investigation as to sobriety and efficiency, &c.; also, a STOKER and ENGINE-DRIVER required.—Apply to JOHN PICKERING, Estate Office, Ingestre, near Stafford.

CARPENTER.—WANTED, a thoroughly practical Man, used to small building jobs and undertaking. To a suitable man the place may prove a constancy. A country hand preferred.—State wages and references to J. PAMPHILON, Chigwell, Essex.

CARPENTER.—A strong, active Man, who has had experience in making and repairing contractors' railway trucks, and is a competent workman in other respects, may hear of Constant EMPLOYMENT. Good personal character indispensable. Apply to Mr. JUPP, Stone, near Dartford.

CARPENTER.—WANTED, on a Gentleman's Estate in Hampshire, a HOUSE and FARM CARPENTER, who thoroughly understands his business. No wagons or carts made on the place. A good cottage and garden.—For further particulars apply to Mr. CHARLES RIDGER, Bailiff, Aldershott Park, Hants.

PICTURE-FRAME MAKER WANTED, in a Gilder's shop about 70 miles from London. A thoroughly reliable and experienced Man, who can join, fit up, cut mounts, and make himself generally useful in the workshop. Good references indispensable. Comfortable and steady place to suitable Man.—Box 113, Office of "The Builder."

PAINTERS (good) WANTED. 6½d. per hour.—Apply to FOREMAN, Messrs. Willicombe & Oakley's, Calverley, Tunbridge Wells.

BRICKMAKERS.—WANTED, a MAN to undertake DIGGING and MAKING at per 1,000, with Whitehead's steam power machine. Trial allowed.—Apply, The How Brick and Tile Works, St. Ives, Hunts.

REPRESENTATIVE (Marble Chimney-piece Manufacturer's, &c.).—A Gentleman, having a thorough knowledge of the above, is open to represent a good house.—G. 92, Osborne-terrace, Clapham-road, London, S.W.

COMMISSIONS, &c.—A gentleman, travelling in London and suburbs, would be glad to undertake Additional Commissions. Rents, accounts, &c. collected. First-class references.—L. W. Blackburn's Library, 342, King-street, Hammersmith.

AGENCY WANTED for LONDON. Brick, Tile, Terra Cotta, Sanitary, or other Clay goods preferred. Advertiser having had many years' experience as the London Agent for a well-known firm of manufacturers, can give first-class references, and has offices in a good position.—Box 129, Office of "The Builder."

DRAWINGS of every Description for BUILDINGS or ALTERATIONS accurately and expeditiously prepared by a good practical DRAUGHTSMAN.—A. B. 2, Boscombe-gardens, Alpha-road, N.W.

DRAWINGS INKED IN and TINTED UP; tracings from pencil drawings, &c.; old maps of estates carefully repaired and remounted. Tracings of all kinds done and mounted by a neat and expeditious Draughtsman. Terms 9d. and 1s. per hour. First-class references from eminent London architects.—Box 136, Office of "The Builder."

WORKING, DETAIL, and other DRAWINGS PREPARED. Tracings made, and architectural assistance of every description rendered, after 4.30, at a very moderate charge.—Address, W. C. 172, Euston-road, N.W.

CONTRACT WORK WANTED, by an experienced Builder in the north of London. Has accommodation to do 1,000l. worth of work.—Address, Box 122, Office of "The Builder."

BUILDERS and Others occasionally ASSISTED and ADVISED in Quantities, Estimates, Extras, and Accounts by an experienced Surveyor. Terms moderate.—Address, METER, City News Rooms, 4, Ludgate Circus Buildings.

NEGLECTED ACCOUNTS POSTED UP on Moderate Terms, in Town or country. Work measured extras and omissions worked up, estimates priced, and general dilapidations surveyed by a Builders' Clerk, of fourteen years' experience at Bench, and in leading London Contractors' Offices.—W. A. Z. care of Mrs. Haigh, Tobacconist, 9a, New Broad-street, E.C.

BUILDER'S SURVEYOR, and an ACCOUNTANT of great experience, wish to undertake together, as EVENING EMPLOYMENT, any Duties occurring in the usual routine of a Builder's Office. Estimates and quantities accurately prepared, accounts made up, book-keeping, prime cost, tracing, copying, &c. to any extent could be undertaken.—Address, B. A. care of Mr. Atkinson, 40a King William-street, City, E.C.

QUANTITIES Taken Out, and Buildings Measured Off, with accuracy and despatch.
C. ANDERSON,
BUILDING AND QUANTITY SURVEYOR,
Office, 27, Coney-street, York.

TEMPORARY ASSISTANCE in Design, Construction, Quantities, Measurement of Works, Levelling, and Surveying. Perspectives drawn and coloured.—J. A. B. 6, Westminster-chambers, S.W.

OCCASIONAL ASSISTANCE given to DECORATORS and BUILDERS by competent SURVEYOR. Great experience in all branches of painting and decorating. Estimates made, and works measured up in any part of the country.—C. 2, Albion Villas, Windsor.

ARCHITECTURAL DRAUGHTSMAN desires a RE-ENGAGEMENT. Eight years' experience in Town and country. Salary moderate.—A. B. care of Ferguson Taylor, esq. 52, Chancery-lane, W.C.

DRAUGHTSMAN (good Architectural), desires an ENGAGEMENT immediately, in London or large provincial town. Terms moderate.—K. W. care of John J. Thomson, esq. 87, Charing-cross, S.W.

DRAUGHTSMAN (expeditious) and experienced GENERAL ASSISTANT. Design, perspective, competition, and thoroughly conversant with professional duties and management.—ARCHITECT, 74, Cambridge-street, Eccleston-square.

DRAUGHTSMAN (Architect's), fairly up in details and one-eighth scale drawings. Has been seven years in the profession. Gothic architecture. Terms 25s. per week.—J. M. J. No. 13, College Precincts, Worcester.

DRAUGHTSMAN, ESTIMATOR, QUANTITY SURVEYOR, or BUILDER'S GENERAL MANAGER, of experience and ability. Partial Assistance if preferred. Aged 27. Terms moderate. Highest testimonials and references.—ARCHITECT, Brooklands, Leamington.

DECORATIVE ARTIST, DESIGNER, and DRAUGHTSMAN wants EMPLOYMENT. Terms moderate. Town or country. Prize medal and certificates of merit.—A. P. M. Perkins & Co. Builders, 86, Camberwell-road, London, S.E.

ARCHITECT and SURVEYOR, retired from general practice, seeks ENGAGEMENT as SUPERINTENDENT of Office or Estate. Experienced in dilapidations, specifications, and accounts. Good references.—C. 11, Percy-road, Shepherd's Bush.

CIVIL ENGINEER and SURVEYOR of good experience, desires to give his services in Midlands. Good surveyor, leveller, draughtsman, &c. Terms moderate. Excellent references.—C. E. 20, Park-street, Nottingham.

ENGINEERING SURVEYOR (experienced) seeks a RE-ENGAGEMENT. Aged 29.—A. E. C. Borough Surveyor's Office, Town-hall, Leicester.

QUANTITY SURVEYOR and MEASURER, thirty years' experience, offers ASSISTANCE (temporarily) in Taking off, Abstracting, Billing, Measuring, Pricing, reasonable terms.—SURVEYOR, 46, Cowley-rd. Brixton, S.W.

ASSISTANT (Architect's) desires an ENGAGEMENT. Unexceptionable references. Terms moderate.—Box 108, Office of "The Builder."

ASSISTANT (experienced) desires a temporary ENGAGEMENT.—X. Y. 22, Abingdon-road, Kensington, W.

ASSISTANT (Architect and Surveyor's) requires a RE-ENGAGEMENT. Seven years' experience. Good reference. Terms moderate.—G. J. T. 69, Liverpool-road Islington, N.

ASSISTANT (Architect and Surveyor's) DISENGAGED. Used to surveying, levelling, &c. Eleven years' experience. Good designer and constructor. Country office or London.—Mr. WOOD, 13, Francis-street, Gower-street, W.C.

ASSISTANT (Surveyor's), who has had several years' experience, desires a RE-ENGAGEMENT, either Temporary or Permanent.—Box 126, Office of "The Builder."

ASSISTANT (good) competent to prepare working drawings from rough sketches, details, perspective, surveying, quantities, &c.—B. D. The Baths, London-street, Reading.

ASSISTANT desires an ENGAGEMENT three or four days a week. Calculations and estimates for ironwork, specifications, and general working drawings.—A. H. 2a Hogarth-road, S.W.

ASSISTANT (Engineer and Contractor's). Railway contractor's son, aged 20, seeks ENGAGEMENT, to take charge of measurements, setting out, &c.—Six years' experience on English railways.—Box 122, Office of "The Builder."

ASSISTANT (Builder's or Surveyor's).—Energetic young man, 23. Good draughtsman and quantity-taker. Can measure up and estimate. Practical knowledge. Understands accounts.—W. F. 2, Little Church-street, Rugby.

ASSISTANT (Architect and Surveyor's) wants an ENGAGEMENT. Perspective, design, and specifications. Able quantity surveyor. Or as CLERK of WORKS. Has a thoroughly practical experience. Or to combine the two. Properly qualified. Aged 29. Unexceptionable character. Salary 2l. 10s. In the north of England at present.—Box 116, Office of "The Builder."

ASSISTANT (Auctioneer and Surveyor's). The Advertiser, age 22, who is well up in Auctioneering, Land, Railway, and Timber Surveying, Mapping, &c. requires an ENGAGEMENT as ASSISTANT or SURVEYOR, in a country town, or would have no objection to go abroad. A moderate salary taken to begin with. Highest references. Testimonials and security, if required.—Address, J. W. H. care of Mr. Alfred Lass, Public Accountant, 30, Gracechurch-street, London.

ASSISTANT (Civil Engineer's), who has had seven years' working practice with an eminent engineer, desires an APPOINTMENT, or Engagement. He has acted as resident engineer on various important schemes, and has had considerable experience in the designing, setting out, and construction of works. He has made and plotted many large surveys, is a good draughtsman, has been accustomed to take out quantities, prepare estimates, measure up work, &c. and has, generally, a thorough knowledge of the details of engineering.—Address, B. 0103, Times Address and Inquiry Office, Blackfriars, E.C.

GENERAL ASSISTANT, good Surveyor, Leveller, and first-class Draughtsman, understands buildings, drainage, sewerage, &c. Highest references. Security if required.—F. L. S. 1, Thorne-road, Clapham, S.W.

JUNIOR ASSISTANT (Surveyor's), aged 19, seeks an ENGAGEMENT. Practical knowledge of the Building Trade. Fair draughtsman, &c. Salary not so much an object.—Box 102, Office of "The Builder."

IMPROVER (Architect's), age 20, desires a SITUATION. Salary expected.—A. J. E. 21, St. Paul's-road, Kensington-park, S.E.

CLERK and DRAUGHTSMAN (estimating) wants a RE-ENGAGEMENT in a London Builder's Office. Experienced in preparing estimates, taking out quantities, measuring and valuing works, &c. Good references from a principal London firm.—N. S. S. 23, Queen's-road, Bayswater, W.

CLERK and DRAUGHTSMAN (Builder and Contractor's). Eight years' practical experience. Can measure up, take out quantities, and fair draughtsman. Salary moderate. Bristol preferred.—F. M. Messrs. Smith & Underhill, No. 227, High-street, Exeter.

CLERK and DRAUGHTSMAN. Well up in prime cost and the customary bookkeeping in a builder's office. A good draughtsman, can take out quantities, and measure up work. Could take charge of office, or in absence of principal. Could manage the business. Aged 23. Thirteen years' experience.—Box 118, Office of "The Builder."

CLERK (drawing) requires a RE-ENGAGEMENT in a London Builder's Office. Used to drawings, tracings, quantities, &c.—G. 1, Leighton-grove, Leighton-road, Kentish-town, N.W.

CLERK (Builder's).—Cashier, Accountant, Ledger, and Prime-cost Clerk is desirous of an APPOINTMENT. Town or country. Good references.—E. 28, Camden-road.

CLERK (Builder, Decorator, and Estate Agent's) Aged 27. Last engagement two years and a half Highest testimonials and references.—ALPHA, care of Stationers, 17, Churton-street, Pimlico.

CLERK in a Builder's Office. Small salary would be accepted to commence with. Aged 23. Total abstainer. Good references and security if required.—EDWIN SMITH, Hermes House, Hurstmonceux, Sussex.

BUILDER'S CLERK wants a Re-Engagement (permanent or otherwise), to make up Neglected Accounts, Measure up Work, Take off Quantities, Estimate, Good draughtsman. References.—Box 106, Office of "The Builder."

BUILDER'S CLERK (experienced), used to measuring up works, estimating, making out accounts, taking out quantities, &c. First-class references.—A. B. 24, Wolsey-road, Midmay Park, N.

YARD CLERK (Stone Merchant's and Wharfinger's) or Otherwise. Young Man, aged 23, of practical experience.—F. J. S. 22, Devonshire-road, Greenwich.